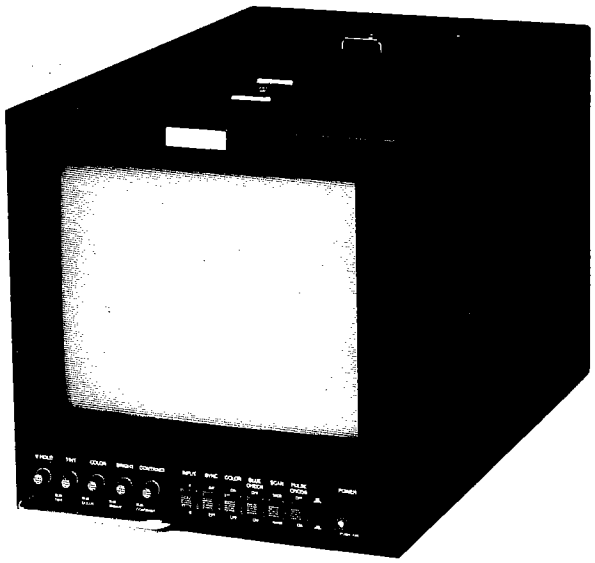
3266

JVC

SERVICE MANUAL

9" COLOR VIDEO MONITOR

MODEL TM-R9U



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* With TM-R9U SCHEMATIC DIAGRAM

SPECIFICATIONS

Dimensions : 22.5 cm(W) x 35.8 cm(D) x 22.7 cm(H)
Weight : 10.9 kg

Color System	: NTSC
Resolution	: 310 Lines or more (at the center)
Video INPUT (A&B)	: 1 Vp-p, 75 Ω (Comp. Video), positive (Nega. Sync.) or 0.7 Vp-p, 75Ω (Video), positive, BNC Connector.
Video OUT (A&B)	: Bridge out, BNC Connector
Sync. INPUT (EXT.)	: 1 ~ 4 Vp-p, 75 Ω (Sync.), Negative or 1 Vp-p, 75 Ω (Comp. Video), positive, (Nega. Sync.) BNC Connector.
Sync. OUT	: Bridge out, BNC Connector.
Remote/Tally	: 7 Pin Cannon type. (See Page 4.)
Power Input	: AC 120V, 60 Hz, DC 12 V/24 V
Power Consumption	: AC 0.55A (max.), 2.8A(DC12V) 1.4A (DC24 V)

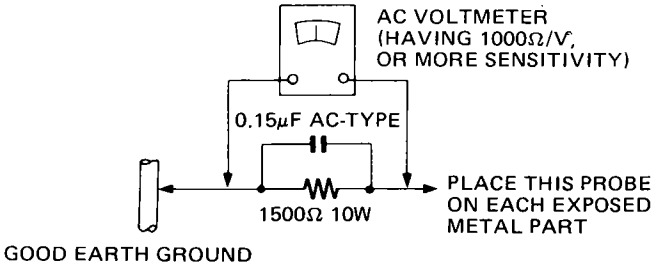
Picture Tube	: 9", 76 degrees deflection In-line, Black matrix, Quick start.
Viewable picture size	: 17.3 cm(W) x 13.6 cm(H).
High Voltage	:21 kV ± 1kV (at zero beam current)
Tube	: 1
IC	: 7
Transistor	: 49

(Design and specifications subject to change without notice)

No. 5433
July 1983

SAFETY PRECAUTION

1. The design of this product contains special hardware, many circuits and components specially for safety purposes.
   For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of receiver should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in television sets have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list in Service manual may create shock, fire, or other hazards.
4. **If any repair has been made to the chassis, it is recommended that the B_1 setting should be checked or adjusted (See ADJUSTMENT OF B_1 VOLTAGE).**
5. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approvided by the manufacturer of the complete product.
6. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.
7. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.
8. ISOLATION CHECK
   (SAFETY FOR ELECTRICAL SHOCK HAZARD)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, channel selector knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
   (1) DIELECTRIC STRENGTH TEST
   The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 1,100 V AC (r.m.s.) for a period of one second.
   This method of test requires a test equipment not generally found in the service trade.
   (2) LEAKAGE CURRENT CHECK
   Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.) Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).
   - ALTERNATE CHECK METHOD
   Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.).
   Measure the AC voltage across the resistor with the AC voltmeter.
   Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.35V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).

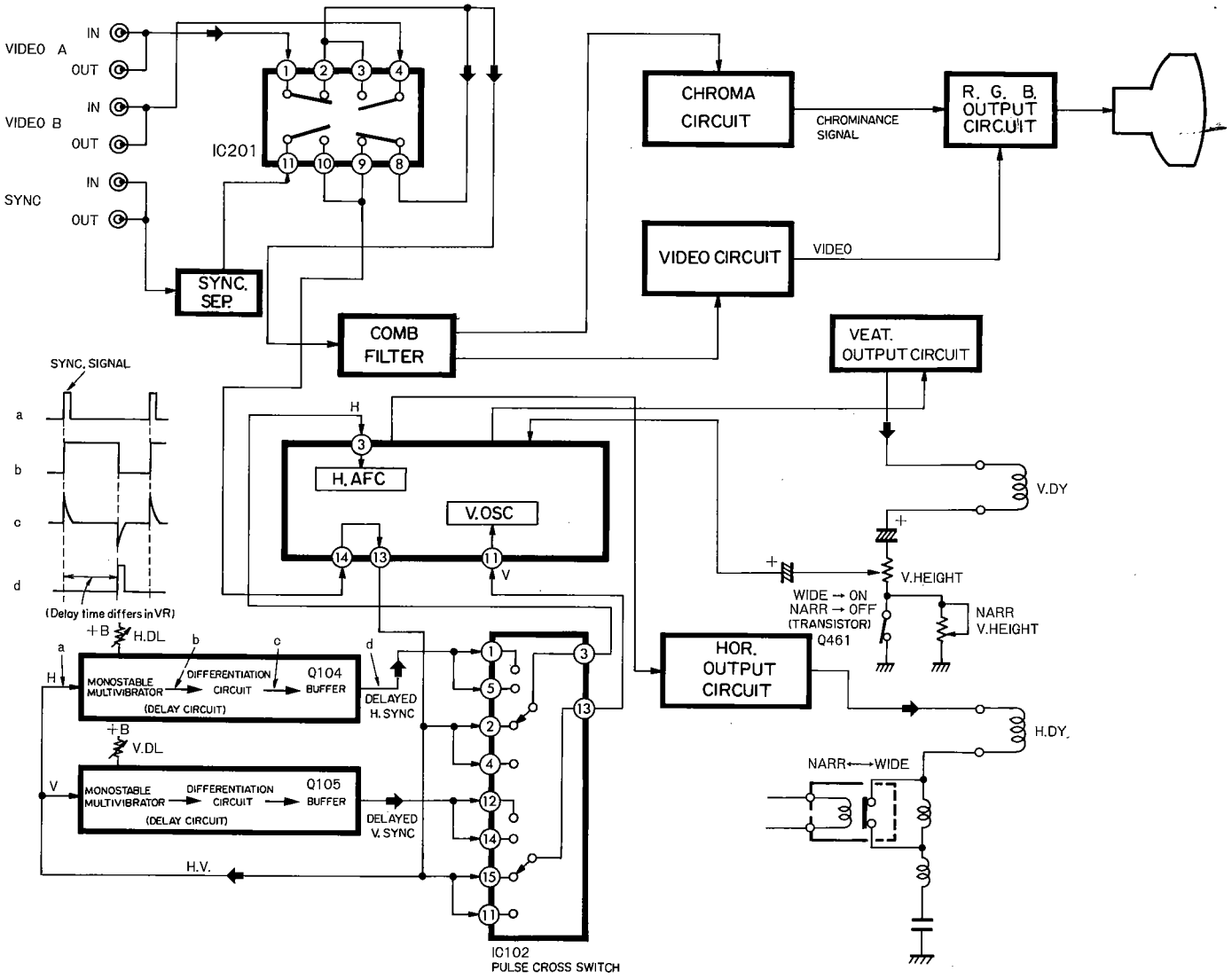


FEATURES

- With two Video Input Terminals.
- With Ext. Sync. Input Terminal.
- With Remote/Tally Terminal (Tally Lamp, SYNC (INT/EXT), SCAN (WIDE/NARR), COLOR (ON/OFF), INPUT(A/B) possible operation).
- Comb Filter equipped for reproducing the high-resolution screen.
- Size Circuit equipped.
- Pulse Cross Circuit equipped for displaying the vertical or horizontal retrace blanking period on the screen.
- Use of a metal cabinet unaffected by magnetism or other appliance. Blue Check Switch equipped for producing a blue single color on the screen.
- Corresponding to two power sources AC/DC (12V/24V).
- Use of a semi-high resolution picture tube functioning for monitor.

OUTLINE

BLOCK DIAGRAM



■ VIDEO A/B INPUT

Two Video Input terminals are equipped and bridged respectively. Change-over of the two input terminals is performed by the front Input switch for changing IC201 (Input switch IC).

■ EXT. SYNC. INPUT

Ext. Sync. Input terminal is equipped and bridged so that this set can monitor a no-sync. video signal. When choosing Int. Sync. or Ext. Sync, change-over IC201 (Input switch IC) by the front Sync. switch.

■ REMOTE/TALLY (7P CANNON TYPE)

The change-over of TALLY LAMP (ON/OFF), SYNC (INT/EXT), SCAN (WIDE/NARR), COLOR (ON/OFF) and INPUT (A/B) is possible by a remote control.

* When lighting a tally lamp with an external power source, change a tally lamp connector within Signal PC Board from INT side into EXT side.

■ BLUE CHECK SWITCH

Switching on the front Blue Check switch increases collector voltage of R. or G. Output transistor respectively and causes the CRT to cut off so that the screen becomes a blue single color.

Color and Tint adjustments can be performed correctly by inputting a color-bar signal (in order of brightness) and displaying a blue signal.

■ SIZE CIRCUIT

Setting the front SCAN switch to NARR side causes the H. Height: Relay changes to OFF, coils are connected in series, and so inductance increases. Accordingly, electric current which flows through a deflection coil decreases and amplitude becomes smaller.

V. Height: Transistor SW(Q461) is OFF, NARR V. HEIGHT VR is connected to V. HEIGHT VR in series, negative feedback amount increases, and V. Height becomes smaller. Rotating VR clockwise decreases negative feedback amount and makes V. Height larger. Rotating VR counter-clockwise makes V. Height smaller.

■ PULSE CROSS CIRCUIT

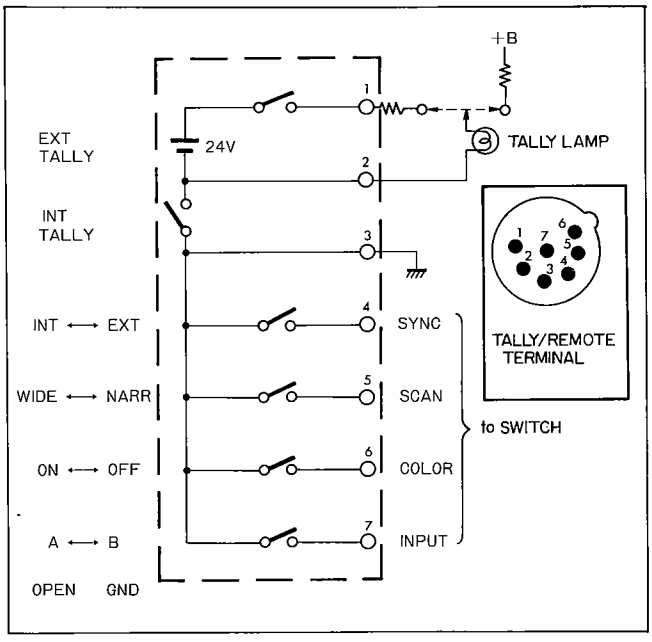
Switching on the front Pulse Cross switch changes IC102 (Pulse Cross switch) to Delay Circuit side.

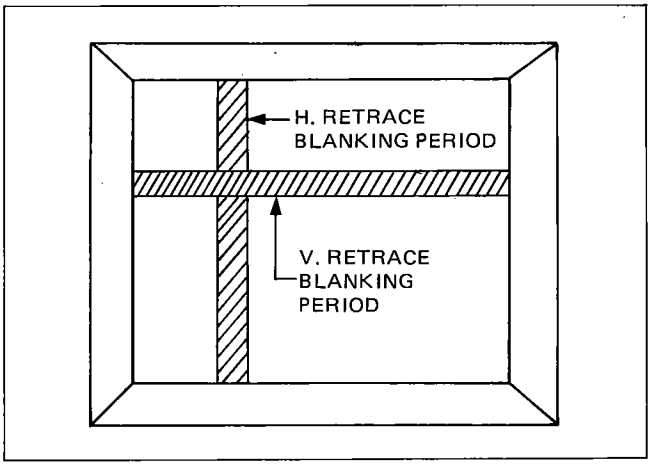
When a sync. signal is input to Delay Circuit, Monostable Multivibrator output makes waveform in Fig. (b) and differentiates it and makes waveform in Fig. (c).

Next, a differentiated signal is input to the next circuit and a delayed sync. signal is obtained as showin in Fig. (d).

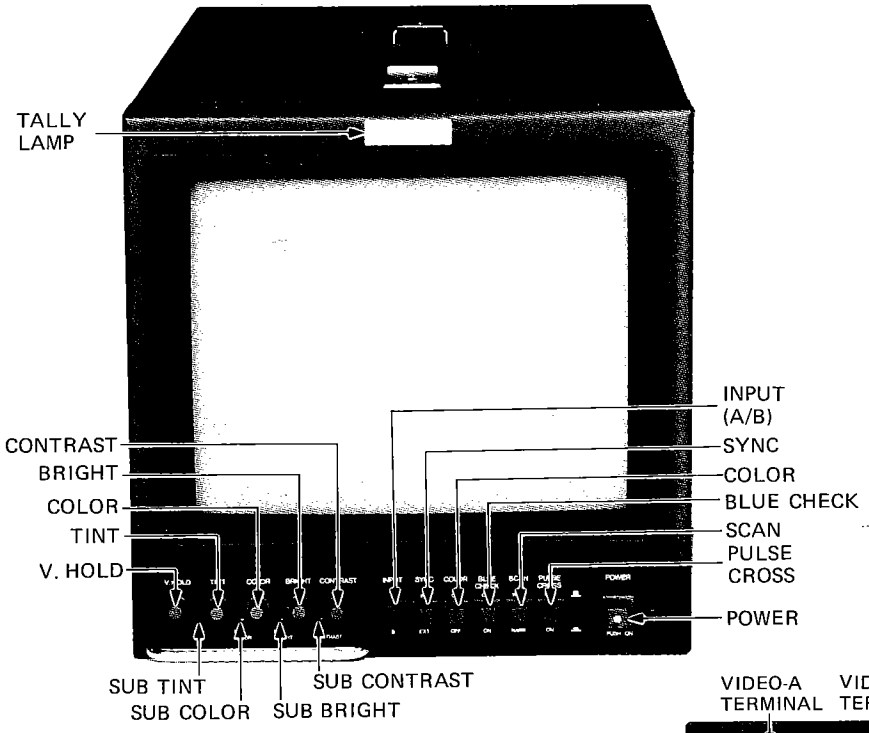
By displaying vertical or horizontal retrace-blanking period (at the same time for making the screen bright and making it easy to see by enlarging vertical height), the sync. signal or other signal for retrace-blanking period can be confirmed.

EXAMPLE CIRCUIT

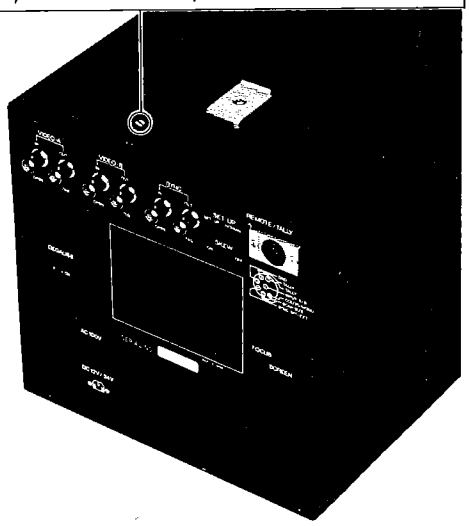


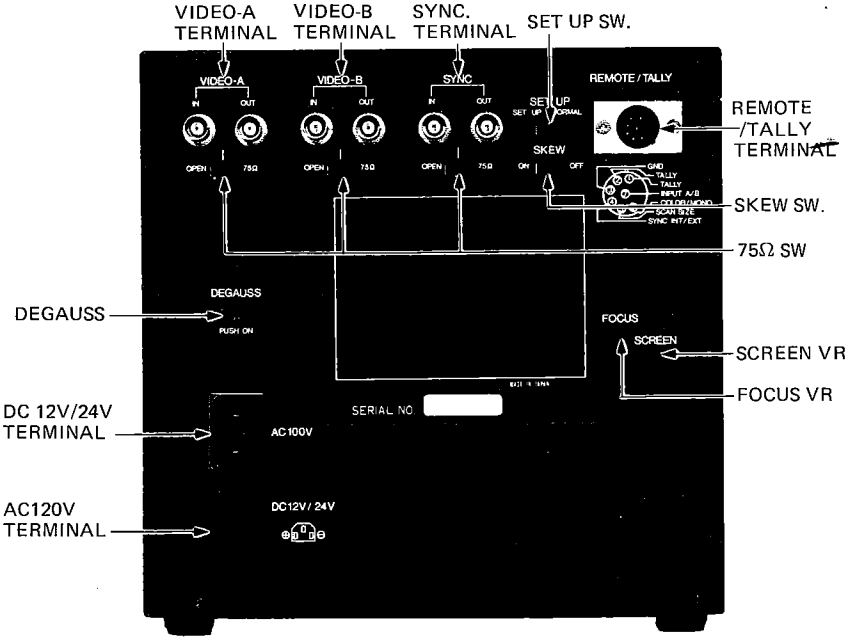


FUNCTIONS



By loosening this screw and opening the door, the following VR adjustments are possible. Viewing from the rear, begin with the left end: R. DRIVE VR, G. DRIVE VR, R. CUT OFF VR, G. CUT OFF VR, B. CUT OFF VR.





■ PULSE CROSS SWITCH

This displays vertical or horizontal retrace-blanking period on the screen.

■ SCAN SWITCH

Change-over of overscan (WIDE side) and under scan (NARR side).

■ BLUE CHECK SWITCH

This changes to the screen of a blue sigle color.

■ COLOR SWITCH

This blanks colors and makes a monochrome screen which can be used to check white balance or adjustments.

■ SYNC. SWITCH

This changes INT. SYNC. and EXT. SYNC.

■ REMOTE/TALLY TERMINAL

See page 4.

■ VIDEO TERMINAL

This inputs video signal and is bridged.

■ SYNC. INPUT (EXT.) TERMINAL

This is a terminal which inputs Ext. Sync. signal and bridged. Further, it can input a composite complicate signal.

■ SET UP SWITCH

Switching on SET UP makes a horizontal line on the screen.

■ DEGAUSS SWITCH (AC only)

A lock-sytle switch is used. When the switch is ON, it interlocks with the front POWER switch and can degauss. When it is OFF, degaussing is possible by switching ON as one's option.

■ SKEW SWITCH

When playing back VTR, this corrects the bend at the top of the screen resulting from tape degradation.

HOW TO REMOVE FOR SERVICE

■ REAR PANEL REMOVAL

Unscrew the six screws (A) in Fig. 5-1.

■ TOP PANEL REMOVAL

Unscrew the four screws (B) in Fig. 5-1 after removing the two screws at top of left and right.

■ FRONT PANEL REMOVAL

Unscrew the four screws (C) in Figs. 5-1 and 5-2.

■ POWER/DEF. PCB CHECK

Unscrew the three screws (D) in Fig. 5-2 and the Bottom Door can be removed.

■ CONTROL/PULSE CROSS PCB CHECK

1. After removing the Front Panel, unscrew one screw (E) in Fig. 5-3.
2. After removing a stopper and wire clamp, PC Board can be drawn forward.

■ WIRE CLAMPING AND TYING BAND

1. Be sure to clamp the wire.
2. Never remove the tying band used for wire clamping. Should it be removed, be sure to reclamp the wire in its original position.
   (Be sure to use insulating material.)

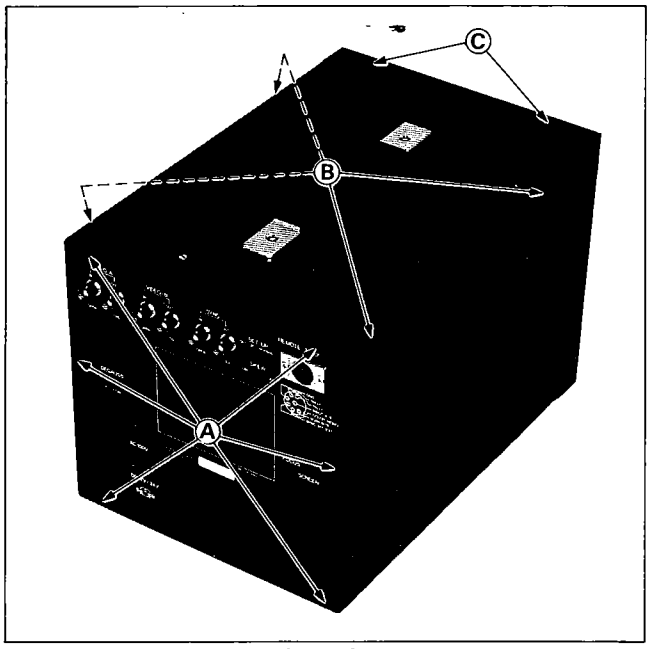


Fig. 5-1

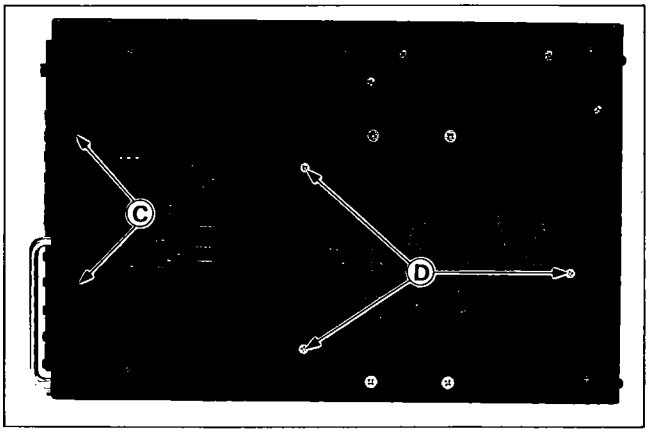


Fig. 5-2

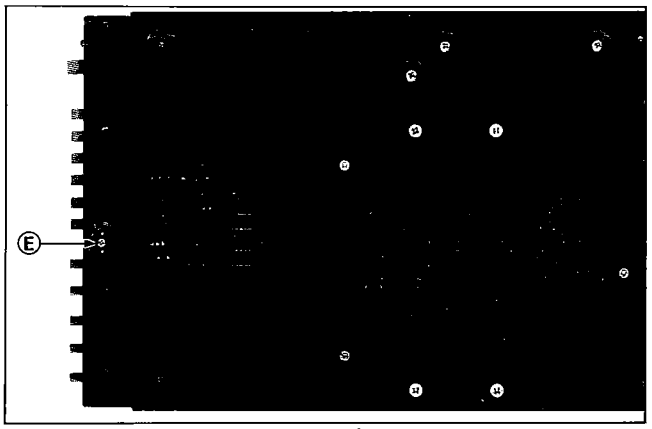


Fig. 5-3

SERVICE ADJUSTMENT

PURITY

1. Display a monochrome pattern.
2. As viewed from the back (See Fig. 6-1), turn the magnet lock counter-clockwise to loosen it.
3. Turn the green cutoff VR (R713) fully clockwise and the red and blue cutoff VRs (R708, R703) fully counter-clockwise. (Fig. 6-2)
   Adjust the screen VR (Fig. 6-7) so that the green band becomes easy to see.
4. Loosen the deflection yoke securing screw and slide the yoke fully rearward to obtain color shading in the green band.
5. Overlap the two purity magnet tabs and set them to 12 o'clock position.
6. Open and close the two purity magnets (scissor fashion) and adjust so that the green band is positioned at the center of the picture.
   If green band is not obtained, adjust for uniform overall coloration.
7. Slide the deflection yoke forward and adjust its position so that the green color completely fills the picture area.
8. Confirm that uniform overall rasters of both red and blue single color can also be obtained in the same manner.
9. Secure the deflection yoke retaining screw moderately so that the deflection yoke does not move back and forth.

STATIC CONVERGENCE (CENTER)

1. Employ a crosshatch pattern and adjust the brightness so that the image is clear, but slightly darkened.
2. Turn the red and blue cutoff VRs fully clockwise and the green cutoff VR fully counter-clockwise (Fig. 6-2). Adjust the screen VR (Fig. 6-7) for an easily seen image.
3. Adjust convergence roughly in the corner by tilting the deflection yoke vertically or horizontally.
4. Turn the two 4 pole convergence magnets and adjust so that red and blue become overlapped throughout the picture area to yield magenta. (Fig. 6-5)
5. Turn the green cutoff VR full clockwise and adjust the two 6 pole convergence magnets so that the green and magenta become overlapped throughout the picture area to yield white. (Fig. 6-4)
6. Repeat steps 4 and 5.

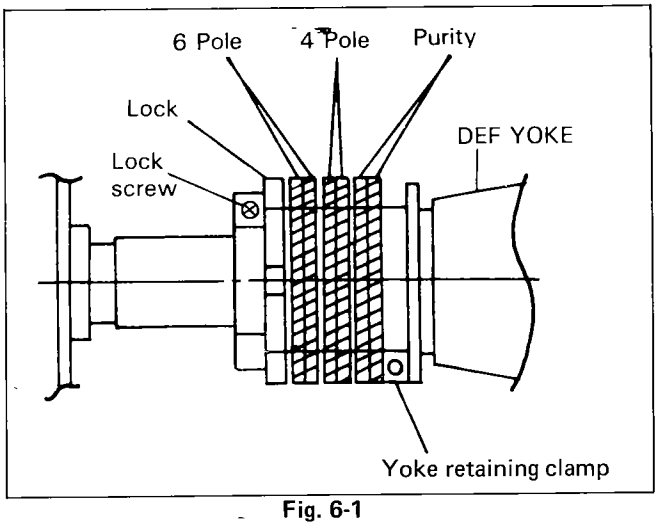


Fig. 6-1

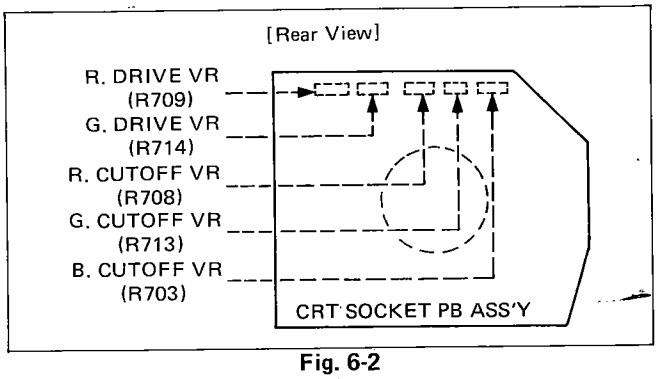


Fig. 6-2

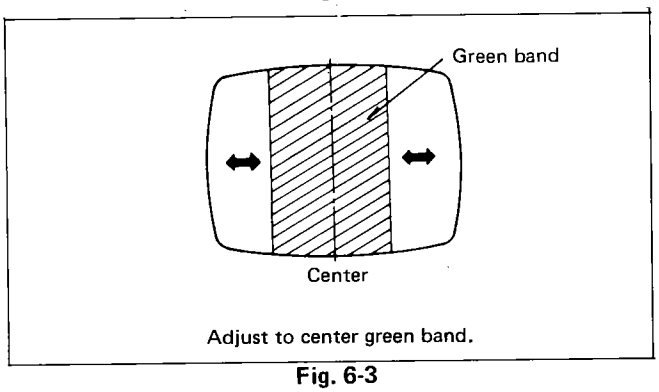


Fig. 6-3

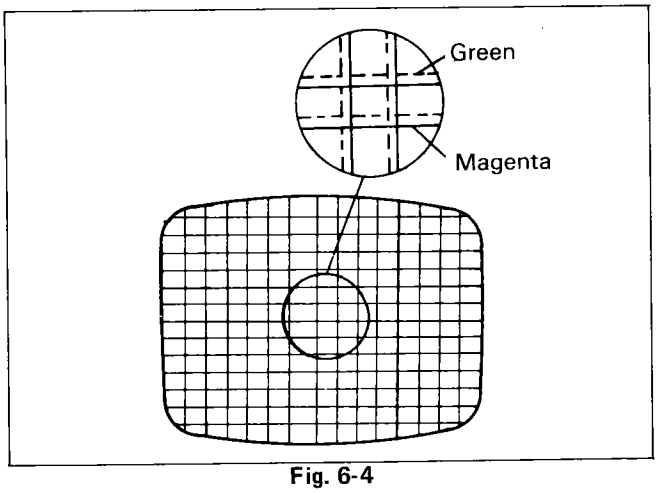


Fig. 6-4

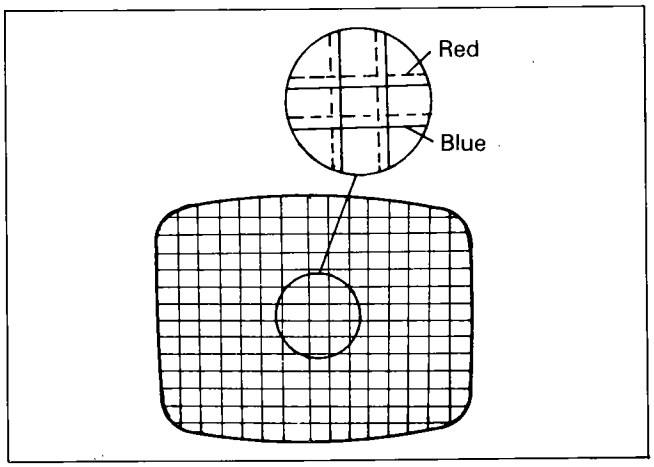


Fig. 6-5

WHITE BALANCE

1. Display a monochrome pattern.
2. Select the SET UP switch from normal to set up, and a horizontal line will appear (Fig. 6-6).
3. Turn the red, blue and green cutoff VRs (R708, R703 & R713) and the screen VR (Fig. 6-7) fully counter-clockwise to eliminate luminance.
4. Gradually turn the screen VR clockwise to where single line of one of the colors appears.
5. Turn the cutoff VR of this color clockwise about 10 degrees.
6. Again turn the screen VR so that this color appears only faintly.
7. Adjust the other cutoff VRs so that the horizontal line becomes white.
8. Return the SET UP switch from set up to normal and then display a monochrome pattern.
9. With a dark picture, perform fine adjustment to obtain optimum white balance.
10. With a bright picture, adjust the red and green drive VRs for optimum white balance.

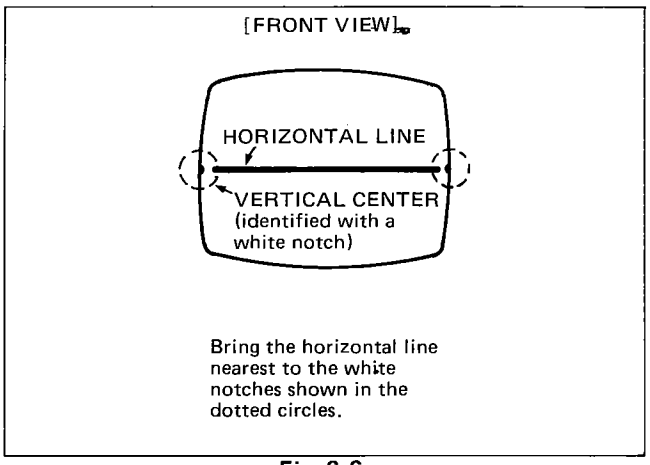


Fig. 6-6

ALIGNMENTS LOCATION

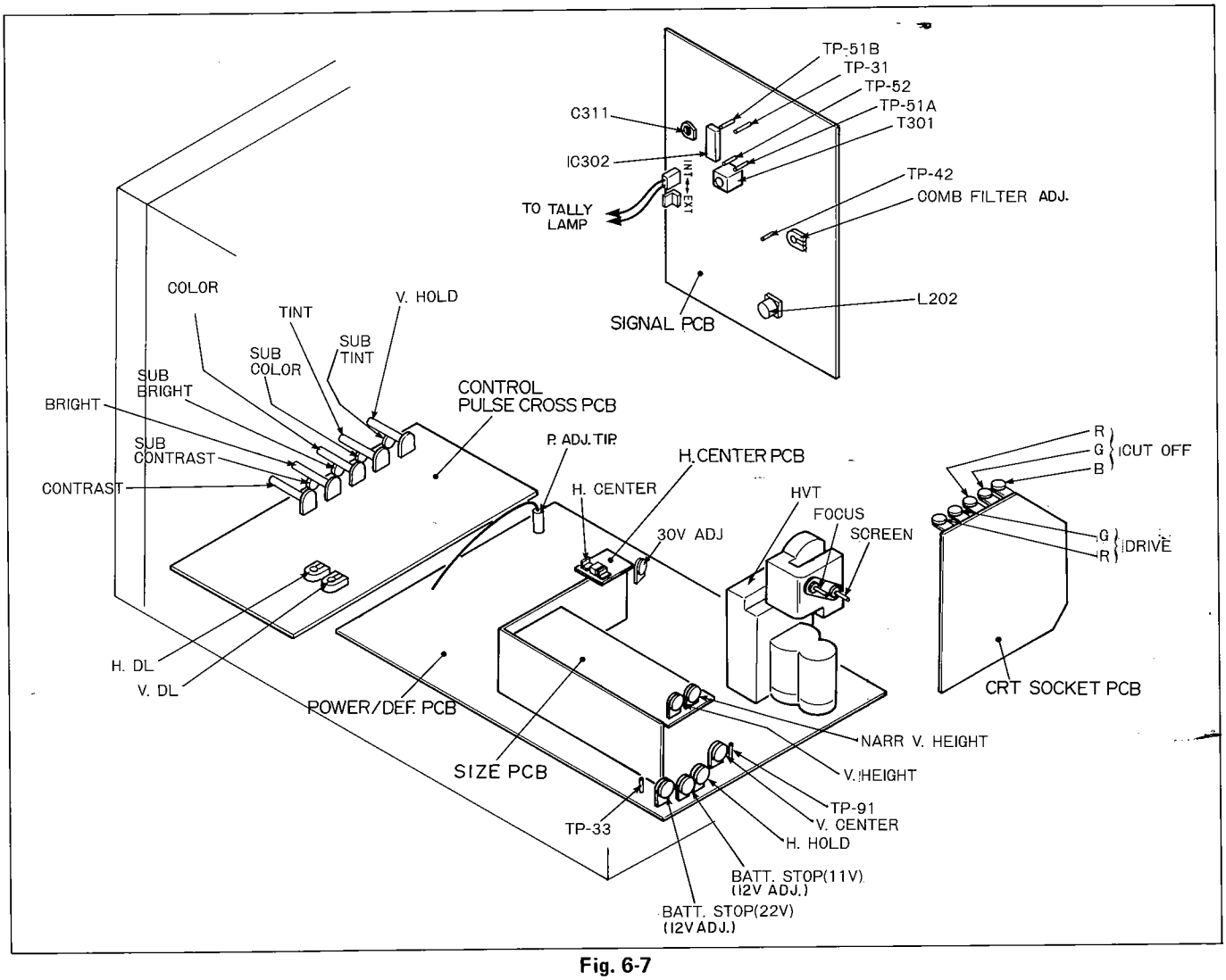


Fig. 6-7

■ B_1 VOLTAGE (30V)

Cut off the picture by the bright VR (R4019) and sub bright VR (R4017). Measure the voltage between TP-91 of the DEF. & POWER PCB Ass'y and TP-E.
Adjust B_1 Adj VR (R916) to obtain 30V.

- The tester used should be periodically calibrated at 20kΩ/V.

■ BATT. OVER DISCHARGE PROTECTOR

- Pull out AC cord.
- Prepare DC Power (voltage control range from 0 to 30V, current capacity 5A).

1. Connect DC Power to [B3] connector.
2. Pull out P. Adj. Tip connected to D906 (1S2473H).
3. Set DC input voltage to 22.0V.
4. Adjust 24V ADJ. VR (R910) and set to the point at which relay changes from ON to OFF.
5. Lower DC input voltage from 22V gradually and confirm that relay changes to ON within the range of 17.3V ~ 19.3V.
6. Set DC input voltage to 11V.
7. Adjust 12V ADJ. VR (R912) and set to the point at which relay changes from ON to OFF.
8. Raise DC input voltage from 10V to 24V gradually and confirm that relay changes to ON at 11V, OFF at 17.3V ~ 19.3V, and ON at 22V.
9. When putting back P. Adj. Tip as it was and lowering input voltage from 24V to 12V and from 12V to 11V, confirm that relay changes from ON to OFF.

Note) When relay changes to OFF under the state in which P. Adj. Tip was put back, it does not self-reset even if voltage becomes normal. Let in power by pushing power switch once more.

■ FOCUS

Adjust focus control for best overall definition and picture detail at normal brightness and contrast.

■ V. CENTER

1. Display a monochrome pattern.
2. Adjust V. Center VR to the optimum vertical picture position.

■ COLOR SYNCHRONIZATION

1. Display a color video signal.
2. Connect a jumper wire between TP-31 and TP-E.
3. Use a nonmetallic driver to turn trimmer capacitor C311.
4. Adjust so that the rolling color stripes become thick and the rolling slows or stops.
5. Remove the jumper wire.
6. Confirm that color sync is not disrupted when signals are switched.

■ SUB CONTRAST AND SUB BRIGHT

1. Display a color video signal.
2. Set the Cont. and Bright to the center click positions.
3. Adjust the Sub Cont. and Sub Bright for optimum display.

■ HORIZONTAL OSCILLATOR

1. Set the H. Hold VR to the mechanical center position.
2. Connect the jumper clip between TP-33 and ground.
3. While retating the H. Hold VR, keep the picture stationary or slowly moving.
4. Remove the jumper wire.
5. Make sure that the set maintains horizontal sync, when signals are switched.

■ COMB FILTER (See. Fig. 6-8)

1. Display a color video signal.
2. Connect an oscilloscope to TP-42. Magnify the color signal portions of the color bar waveform so that the 3.58 MHz elements become easy to observe.
3. Adjust L202, and minimize the 3.58 MHz elements.
4. Regulate the comb filter adjustment VR to further minimize the 3.58 MHz elements.
5. Repeat steps 3 and 4 to fully minimize the 3.58 MHz elements.

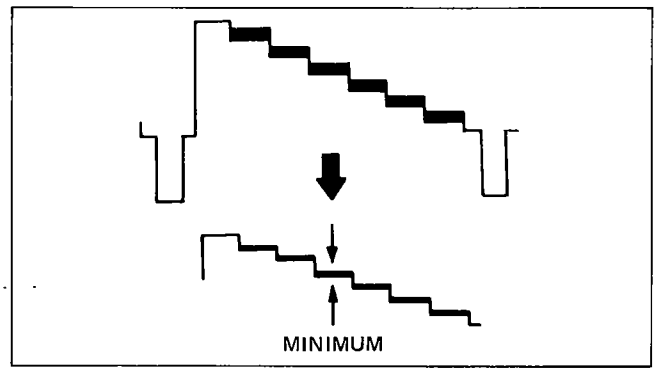


Fig. 6-8

■ H. CENTER

Centering is completed at the factory, although it may become distorted when CRT is changed.
In such case, moving the connector [U] (adj. point left, center and right) move the picture left or right.

■ SUB TINT AND SUB COLOR

1. Display a color video signal.
2. Set the Tint and Color controls to the center click positions.
3. Adjust the Sub Tint and Sub Color for optimum display.

■ PULSE CROSS POSITION

1. Switch on Pulse Cross Switch.
2. Adjust V. DL VR (R123) so that vertical sync. signal portion centers on the screen.
3. Adjust H. DL VR (R111) so that horizontal sync. signal portion comes from the left end to a quarter of the screen.

■ V. HEIGHT (See. Fig. 6-9)

- Display a cross-hatch signal.

1. Set SCAN SW to WIDE and adjust V. Height VR (R464) so that raster becomes 95% of viewable picture size.
2. Next, set SCAN SW to NARR and adjust NARR V. HEIGHT VR (R463) so that raster is on the inside (about 7mm from top and bottom respectively) of the end of viewable picture size.

* When raster position is not located correctly, adjust V. HEIGHT VR (R429).

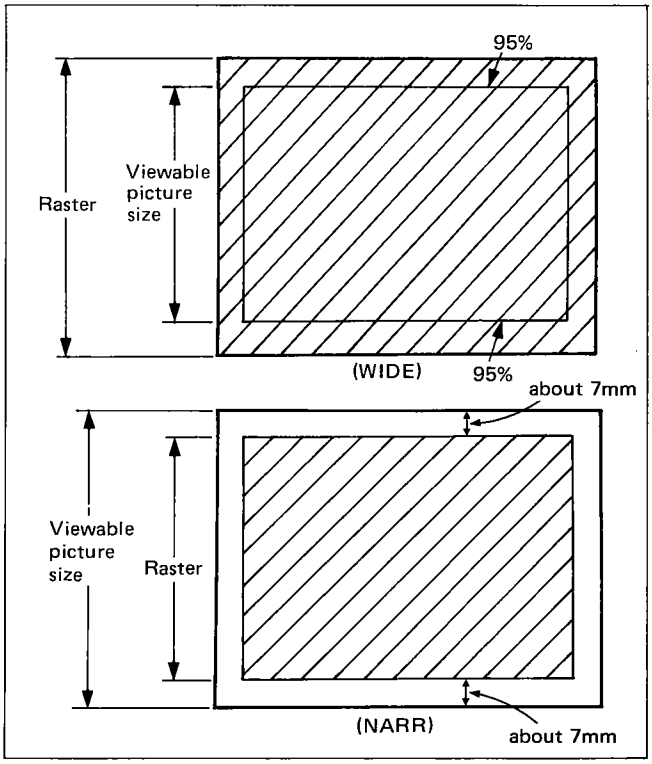


Fig. 6-9

REPLACEMENT PARTS LIST

PRODUCT SAFETY NOTE
Components identified by the ⚠ symbol in the PARTS LIST and the shaded areas on the Schematic have special characteristics important to safety. Before replacing any of these components read carefully the **SAFETY PRECAUTION** on Page 2 of this Service Manual. DO NOT degrade the safety of the set through improper servicing.

1. ABBREVIATED WORD OF RESISTORS AND CAPACITORS

RESISTOR

C R	:	Carbon Resistor
Comp. R	:	Composition Resistor
OM R	:	Oxide Metal Film Resistor
V R	:	Variable Resistor
MF R	:	Metal Film Resistor
CMF R	:	Coating Metal Film Resistor
F R	:	Fusible Resistor
UNF R	:	Nonflammable Resistor

CAPACITOR

C Cap.	:	Ceramic Capacitor
M Cap.	:	Mylar Capacitor
E Cap.	:	Electrolytic Capacitor
BP E Cap.	:	Bi-Polar (or Non-Polar) Electrolytic Capacitor
MM Cap.	:	Metalized Mylar Capacitor
PP Cap.	:	Polypropylene Capacitor
MPP Cap.	:	Metalized PP Capacitor
PS Cap.	:	Polystyrol Capacitor
Tan. Cap.	:	Tantal Capacitor

2. FOLLOWING RESISTORS AND CAPACITORS OF STANDARD ELECTRICAL COMPONENTS ARE OMITTED FROM THIS PARTS LIST. EACH PART NUMBER OF THESE STANDARD REPLACEMENT COMPONENTS IS DEFINED AS FOLLOWS.

Carbon Resistor (C R): Lead form ( )

Rating	Part No.
¼W	QRD141J−□□□ (CR, ¼W, Lead form, Tolerance, Constant term)
½W	QRD121J−□□□

Composition Resistor (Comp. R): Lead form ( )

Rating	Part No.
½W	QRC121K−□□□ (Comp. R, ½W, Lead form, Tolerance, Constant term)

Mylar Capacitor (M Cap.): Lead form ( )

Withstand Voltage	Part No.
50V	QFM41HK−□□□ (M Cap., Lead form, 50V, Tolerance, Constant term)
100V	QFM42AK−□□□
200V	QFM42DM−□□□

Ceramic Capacitor (C Cap.): Lead form ( )

Withstand Voltage	Parts No.
25V	QCS11EJ−□□□ (C Cap., Lead form, 25V, Tolerance, Constant term)
50V	QCS11HJ−□□□
500V	QCS12HJ−□□□

Electrolytic Capacitor (E Cap.): Lead form ( )

Withstand Voltage	Parts No.
6.3V	QET40JR−□□□ (E Cap., Lead form, 6.3V, Tolerance, Constant term)
10V	QET41AR−□□□
16V	QET41CR−□□□
25V	QET41ER−□□□
50V	QET41HR−□□□

3. DECODING OF TOLERANCE AND CONSTANT TERM

J: ±5% K: ±10% M: ±20% N: ±30% H: $^{+50}_{-10}$% Z: $^{+80}_{-20}$% P: $^{+100}_{-0}$% A: $^{+100}_{-10}$% R: $^{+30}_{-10}$%

CONSTANT TERM

- **Carbon Resistor (¼W, ±5% Tolerance)**

QRD141J−□□□ (CONSTANT TERM.)

− □ □ □
↑ ↑ ↑
1 R 0 → 1.0Ω
⋮ ⋮ ⋮
9 R 7 → 9.7Ω

1 0 □ → 10□ means 10 x 10□ (Ω)
⋮ ⋮ ⋮
8 2 □ → 82□ means 82 x 10□ (Ω)

2.7Ω → QRD141J-2R7
47kΩ → 47 x 10³ → QRD141J-473

- **Ceramic Capacitor (50 Volts, ±5% Tolerance)**

QCS11HJ−□□□ (CONSTANT TERM.)

− □ □ □
↑ ↑ ↑
1 R 0 → 1.0pF
⋮ ⋮ ⋮
8 R 0 → 8.0pF

1 0 □ → 10□ means 10 x 10□ (pF)
⋮ ⋮ ⋮
8 8 □ → 88□ means 88 x 10□ (pF)

5pF → QCS11HJ-5R0
680pF → 68 x 10¹ → QCS11HJ-681
3.3μF → 33 x 10⁵ → QCS11HJ-33E

TRC-1042A (SIGNAL PCB ASS'Y)

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARK
VARIABLE RESISTOR				
R1245		CEX40053-052	VR (COMB FILTER ADJ.)	500Ω B
RESISTOR				
R1801		QRG029J-331A	OM R	330Ω 2W J
1802		" -471A	"	470Ω " "
CAPACITOR				
C1216		QEE51VK-474M	Tan. Cap.	0.47μF 35V K
1226		QEN61HM-475Z	BP E Cap.	4.7μF 50V M
1311		QAT3001-010	Trim. Cap.	
COIL				
L1201		A04725-27Z	Peaking Coil	27μH
1202		CE40176-001	DL P Transf.	
1203		A04725-5.6Z	Peaking Coil	5.6μH
1204		" -330Z	"	330μH
1205		A49468-101	"	
1301		A04725-3.3Z	"	3.3μH
1302		A76186-33	"	
1303		" -33Z	"	
1304		" -33	"	
1305		A04725-220Z	"	220μH
TRANSFORMER				
T1301		A75196-B	3.58 MHz BP Transf.	

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARK
DIODE				
D1201		1S1555-Y	Si. Diode	
1202		"	"	
1203		RD6.2E(B)	Zener Diode	
1204		1S2076A-Y	Si. Diode	
1205		1S1555-Y	"	
~ 7				
1208		RD12E(B)	Zener Diode	
TRANSISTOR				
Q1201		2SD637(S)	Transistor	
~ 3				
1205		"	"	
1206		2SD637(R,S)	"	
~ 8				
1209		2SC1815(Y,GR)	Si. Transistor	
~ 12				
1213		2SA562TM(Y)	"	
1214		2SA1015(Y)	"	
1215		2SC1815(O,Y)	"	
IC				
IC1201		TC4066BP	IC	
1202		HA11465	"	
1301		HA11464	"	
OTHER				
FR1201	⚠	QRZ0054-3R9M	FR	3.9Ω ¼W J
DL1201		**CE40177-001**	1H Delay Line	
1202		**CE40526-001**	Delay Line	
X1301		**A75746**	Crystal	

TRC-2142A (DEF./POW. PCB ASS'Y)

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARK
VARIABLE RESISTOR				
R2429		A75557-222	VR(V. Center)	2.2kΩ B
2506		" -472	" (H. Sync.)	4.7kΩ "
2910		" -222	" (24V Setting)	2.2kΩ "
2912		" -103	" (12V Setting)	10kΩ "
2916	⚠	" -222	" (30V Setting)	2.2kΩ "
RESISTOR				
R2422		QRX019J-2R7S	MF R	2.7Ω 1W J
2508	⚠	QRV141F-8451Y	"	8.45kΩ ¼W ±1%
2513		QRG029J-121A	OM R	120Ω 2W J
2520	⚠	QRV141F-2202Y	MF R	22kΩ ¼W ±1%
2530	⚠	QRD149J-1R0S	C R	1Ω " J
2531	⚠	" -1R0S	"	" " "
2533		ERZ-C05ZK471	Z N R	
2901		QRG019J-152	OM R	1.5kΩ 1W J
2915	⚠	QRV141F-6801Y	MF R	6.8kΩ ¼W ±1%
2917	⚠	" -2402Y	"	24kΩ " "
2931		QRG029J-681A	OM R	680Ω 2W J
2509	⚠	QRD141J-473SY	C R	47kΩ ¼W "
2918	⚠	" -224SY	"	220kΩ " "
CAPACITOR				
C2403		QFP32AG-103M	PP Cap.	0.01μF 100V G
2407		QEE51VK-474M	Tan. Cap.	0.47μF 35V K
2409		" -225M	"	2.2μF " "
2411		QEU51EM-108M	E Cap.	1000μF 25V M
2413	⚠	QET51VR-107	"	100μF 35V R
2415		QFV81HJ-154M	TF Cap.	0.15μF 50V J
2510	⚠	QFP42JJ-562M	PP Cap.	5600pF 630V J
2511	⚠	" -472M	"	4700pF " "
2512	⚠	" -562M	"	5600pF " "
2513	⚠	" -562M	"	" " "
2514	⚠	QEZ0077-106M	E Cap.	10μF 250V H
2516		QFK62AJ-335M	MM Cap.	3.3μF 100V J

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARK
C2518		QEN51HM-474	BP E Cap.	0.47μF 50V M
2519	⚠	QET51CR-477	E Cap.	470μF 16V R
2520	⚠	QET51VR-477	"	" 35V "
2521		QFP31HJ-332S	PP Cap.	3300pF 50V J
2525		QEE51CK-225M	Tan. Cap.	2.2μF 16V K
2526	⚠	QCY32HK-681M	C Cap.	680pF 500V "
2530		QFP42JJ-472M	PP Cap.	4700pF 630V J
2531	⚠	" -562M	"	5600pF " "
2906	⚠	QEV71VR-109M	E Cap.	10000μF 35V R
2911	⚠	QET51VR-108	"	1000μF " "
2912	⚠	" -477	"	470μF " "
2914		QEN51CM-106	BP E Cap.	10μF 16V M
2922	⚠	QEM41VM-107M	E Cap.	100μF 35V "
COIL				
L2501		CE30001-420	Heater Choke	
2507		CE40155-001	Core	
2901		CE40224-001	Power Choke	
2902		CE40289-001	Coil	
2903		CE40155-001	Core	
TRANSFORMER				
T2501		**A76568-MA**	H Drive Transf.	
2902		A76567-MA	P Drive Transf.	
DIODE				
D2401		V06C	Si. Diode	
2402		RD15E(B)	Zener Diode	
2403		"	"	
2501		V19E	Si. Diode	
2502		V09E	"	
2503		V09-G	Diode	
2504		V09E	Si. Diode	

TRC-2142A (EDEF/POW PCB ASS'Y)

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARK
DIODE				
D2506	⚠	RD6.8E(B2)-Y	Zener Diode	
2901	⚠	RB601	Si. Diode	
2902		V06C	"	
2903		"	"	
2904		RD12E(B)-Y	Zener Diode	
2905		V06C	Si. Diode	
2906		1S2473H-Y	"	
2907		RD6.8E(B2)	Zener Diode	
2908		RD18E(B3)-Y	"	
2909		RG-2Y	Si. Diode	
2910		ESAB82-004	"	
2911		1S2473H	"	
2912	⚠	HZ7-V1	Zener Diode	
2913		HZ12(B)L	"	
2914		1S2473H-Y	Si. Diode	
2915		"	"	
TRANSISTOR				
Q2501		2SC1627A(Y)	Si. Transistor	
2502	⚠	2SC2749	"	

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARK
Q2503		03P2M	Thyristor	
2504		2SC1685	Si. Transistor	
2901		2SD1133(C,D)-L	"	
2902		2SC1685	"	
2903		2SA1015(Y,GR)	Transistor	
2904		2SC1685	Si. Transistor	
~ 7				
2908		2SA1015(Y,GR)	Transistor	
2909		2SC1685	Si. Transistor	
~ 11				
2912		2SA817A(Y)	Transistor	
2913		2SC2750	Si. Transistor	
IC				
IC2401		LA7801	IC	
2402		μPC1378H	"	
OTHER				
F02	⚠	QMF51U1-5R0S	Fuse	5A
S2902		CE40134-001	Relay	

TRC-3042A (CRT SOCKET ASS'Y)

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARK
VARIABLE RESISTOR				
R3703		**A75557-103**	VR(B.Cutoff)	10kΩ B
3708		**" -103**	" (R.Cutoff)	" "
3709		**" -221**	" (R.Drive)	220Ω "
3713		**" -103**	" (G.Cutoff)	10kΩ "
3714		**" -221**	" (G.Drive)	220Ω "
RESISTOR				
R3717		QRG019J-822S	OM R	8.2kΩ 1W J
3719		" -822S	"	" " "
3721		" -822S	"	" " "
CAPACITOR				
C3704	⚠	QET52ER-475	E Cap.	4.7μF 250V R
3705		QCZ9017-102M	C Cap.	0.001μF AC150V
3706		QET52ER-105	E Cap.	1μF 250V R

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARK
COIL				
L3701		A76186-150	Peaking Coil	150μH
~ 3				
DIODE				
D3701		1S2473H	Si. Diode	
3702		RM-2C	"	
3703		1S2473H	"	
TRANSISTOR				
Q3701		2SC2611	Si. Transistor	
~ 3				
3704		2SC454(C)	"	
3705		"	"	
OTHER				
	⚠	CE40228-00A	CRT Socket	

TRC-4042A (CONTROL PCB ASS'Y)

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARK
VARIABLE RESISTOR				
R4003		**CEX40225-B14M**	VR(CONTR.)	10kΩ B
4005		**A76193-223**	" (SUB CONTR.)	22kΩ "
4007		**" -223**	" (SUB TINT)	" "
4008		**CEX40225-B53M**	" (TINT)	5kΩ "
4012		**A76193-103**	" (SUB COLOR)	10kΩ "
4013		**CEX40225-B14M**	" (COLOR)	" "
4017		**A76193-102**	" (SUB BRIGHT)	1kΩ "
4019		**CEX40225-B52M**	" (BRIGHT)	500Ω "
4022		**CEX40224-B24M**	" (V.HOLD)	20kΩ "
4111		CEX40053-024	" (H.DL)	" "
4123		" -015	" (V.DL)	100kΩ "
RESISTOR				
R4103		QRG019J-330S	OM R	33Ω 1W J
CAPACITOR				
C4108		QEU51CM-227M	E Cap.	220μF 16V M
DIODE				
D4001		GL-5PR1	LED	

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARK
D4002~5		RD15E(B)	Zener Diode	
4101		1S2076A-Y	Si. Diode	
4102		"	"	
TRANSISTOR				
Q4001		2SA1015(O,Y)	Transistor	
4002		2SC1815(O,Y)	Si. Transistor	
4003		"	"	
4004		2SA1015(O,Y)	Transistor	
4101		2SC1815(O,Y)	Si. Transistor	
~ 3				
4104		2SA1015(O,Y)	Transistor	
4105		"	"	
IC				
IC4101		TC4001BP	IC	
4102		TC4052BP	"	
OTHER				
S4101		CEX40128-002	Push Switch	

TRC-8043A (SIZE PCB ASS'Y)

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARK
VARIABLE RESISTOR				
R8463		A75557-472	VR (NARROW V. AMP)	4.7kΩ B
8464		" -471	" (V. AMP)	470Ω "
RESISTOR				
R8561		QRG019J-152S	OM R	1.5kΩ 1W J
COIL				
L8561	⚠	CE40222-001	Lin. Coil	
8562	⚠	CE30001-420	Heater Choke	
8563		CJ30030-046	"	
8564		" -054	Coil	

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARK
DIODE				
D8561		RD12E(B)	Zener Diode	
TRANSISTOR				
Q8461		2SC1685	Si. Transistor	
8561		2SD1133	Transistor	
8562		2SA1015(Y,GR)	Transistor	
8563		2SC1685	Si. Transistor	
OTHER				
RY8561		CE40134-001	Relay	

TRC-9142A (POWER PCB ASS'Y)

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARK
CAPACITOR				
C909	⚠	QFZ9020-473M	MF Cap.	0.047μF
TRANSFORMER				
T903	⚠	CE40180-00A	Line Filter	

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARK
OTHER				
F901	⚠	QMF53U1-3R15S	Fuse	3.15A
TH901	⚠	**A75511**	Posistor	

TRC-8042A (H. CENTER PCB ASS'Y)

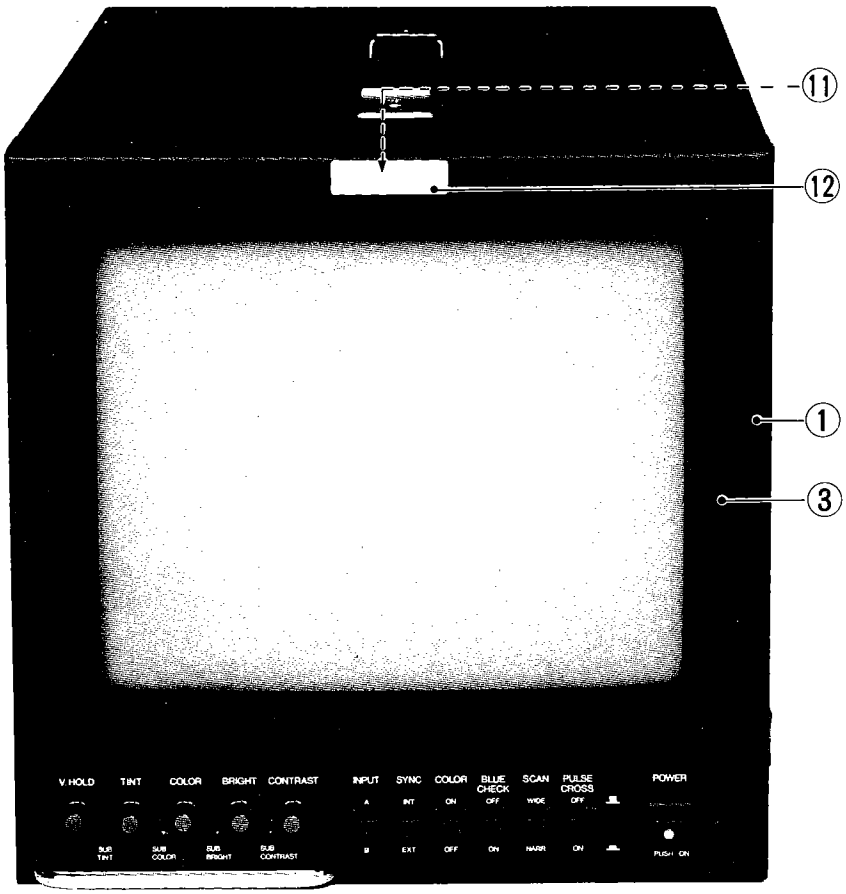
SYMBOL NO.	⚠	PART NO.	PART NAME	REMARK
RESISTOR				
R8552		QRG019J-102S	OM R	1kΩ 1W J

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARK
DIODE				
D8552		V09E	Si. Diode	

CABINET AND CHASSIS PARTS LIST

VIEW NO.	SYMBOL NO.	⚠	PART NO.	PART NAME	REMARK
1			CM20333-001	Front Panel	
2			SSSB3010M	Screw	(x4) for Front Panel
3			CM20334-00B	Front Escutcheon	
4			C41680	JVC Mark	
5			CM41895-001	Protector	
6			SSSP3006Z	Screw	(x2) for Protector
7			CM41870-001	Knob Bush	(x5)
8			CM41725-001	"	(x6)
9			CM41726-001	"	(x1)
10	D4001		GL-5PR1	LED	POWER DISPLAY
11			AX49463-2	Pilot Lamp	TALLY DISPLAY
12			CM41728-001	Tally Plate	
13			CM10196-A0A	Cabinet Ass'y	
14			QZF2207-001	Foot	(x4)
15			GBSB3006Z	Screw	(x4) for Foot
16			CM30841-001	Bottom door	
17			SSSB3006Z	Screw	(x3) Bottom door
18			SSSB4016Z	"	(x4) for Chassis Rail
19			SBSB4010Z	"	(x4) for Power Unit
20			CM10194-00A	Top Cover Ass'y	

VIEW NO.	SYMBOL NO.	⚠	PART NO.	PART NAME	REMARK
21			CM41650-001	Screw	Top Door
22			SSSB3010M	"	(x4) for Top Cover Ass'y
23			PU46361-2	Handle	
24			PU46385-3	Handle Cover	(x2)
25			SHSP4012R	Screw	(x2) for Handle
26			Q03091-110	Washer	(x2) for Handle
27			NNZ4000Z	Nut	(x2) "
28			CM20372-B0B	Rear Cover Ass'y	
29			SBSB3008M	Screw	(x6) for Rear Cover
30			CM20002-019	Rating Label	
31			CM41971-00A	Insulator	
32	J03		A76019-002	BNC Jack	(x6)
33	J09		CE40451-001	Cannon Connector	
34	S03		AX49611	Slide Switch	(x5)
35			CM41904-001	Blind Cover	(x4)
36			CM40498-001	Main Knob	for POWER
37			CM40495-002	Button	(x6)
38			C40755	Push Knob	for DEGAUSS
39			CM41727-001	Rear Door	AC/DC Socket Cover
40	J01	⚠	QMC0335-003R	AC Socket (3P Inlet)	
41	J02	⚠	CEX40121-001	DC Socket	
42	V01	⚠	**A22JCM00X-AB**	Picture Tube	
43	DY01	⚠	**CJ26001-00A**	Deflection Yoke	
44			CE40266-00A	PC Magnet	
45			CH30106-00A	CRT Earth Wire	
46			A48457	Spring	(x2)
47			CE40146-002	WQ Magnet	
48			A46445	Focus Cover	
49			CJ49503-001	Focus Cap.	
50	T502	⚠	**CJ26055-00A**	HV Transf.	
51	L504	⚠	CJ39562-00A	Degaussing Coil	
52	S901	⚠	**CEX40204-00B**	Power Switch	
53	T901	⚠	**CE30058-B0A**	Power Transf.	
54		⚠	CEX40199-001	Push Switch	Degaussing
55	F02	⚠	QMF51U1-5R0S	Fuse	5A
56	F901	⚠	QMF53U1-3R15S	"	3.15A
57			CM30842-001	Rear Panel	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V HOLD
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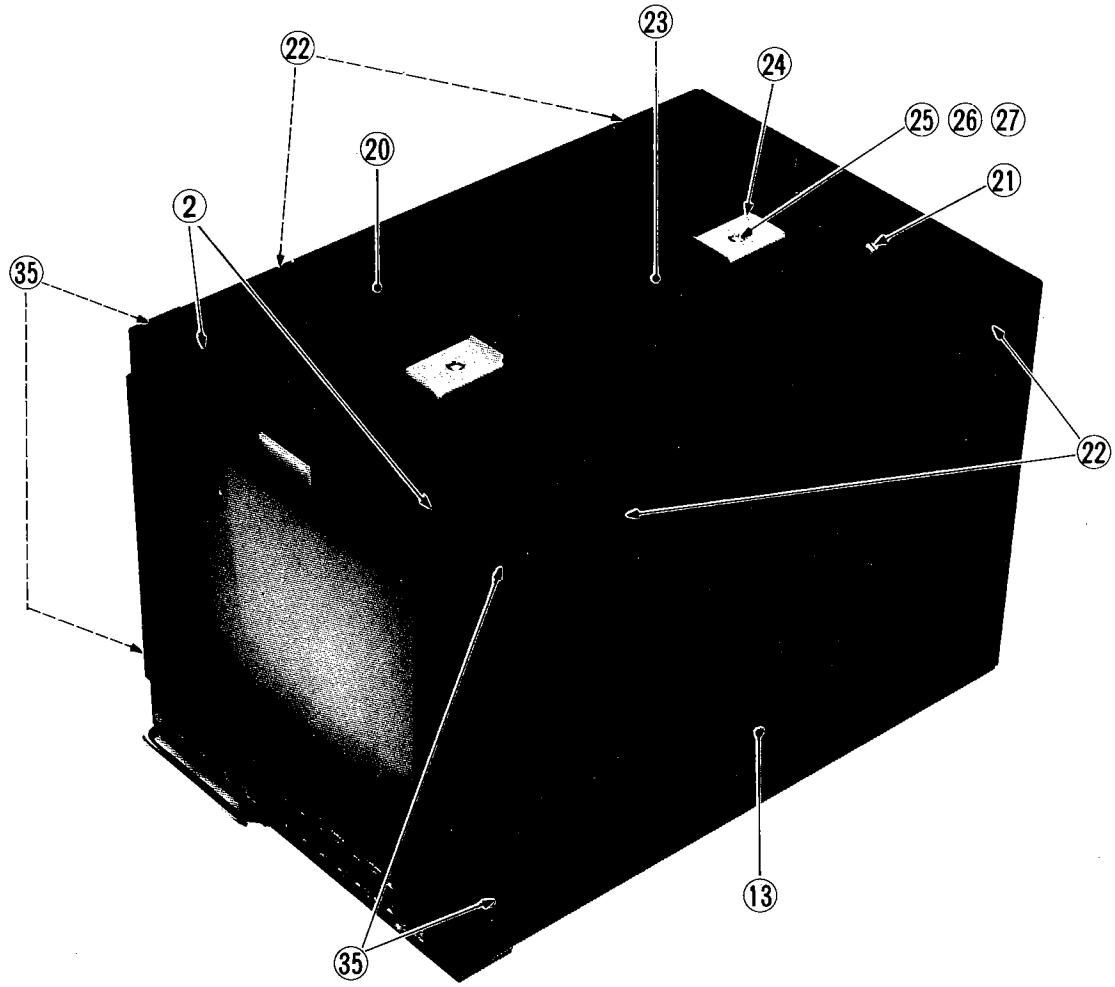
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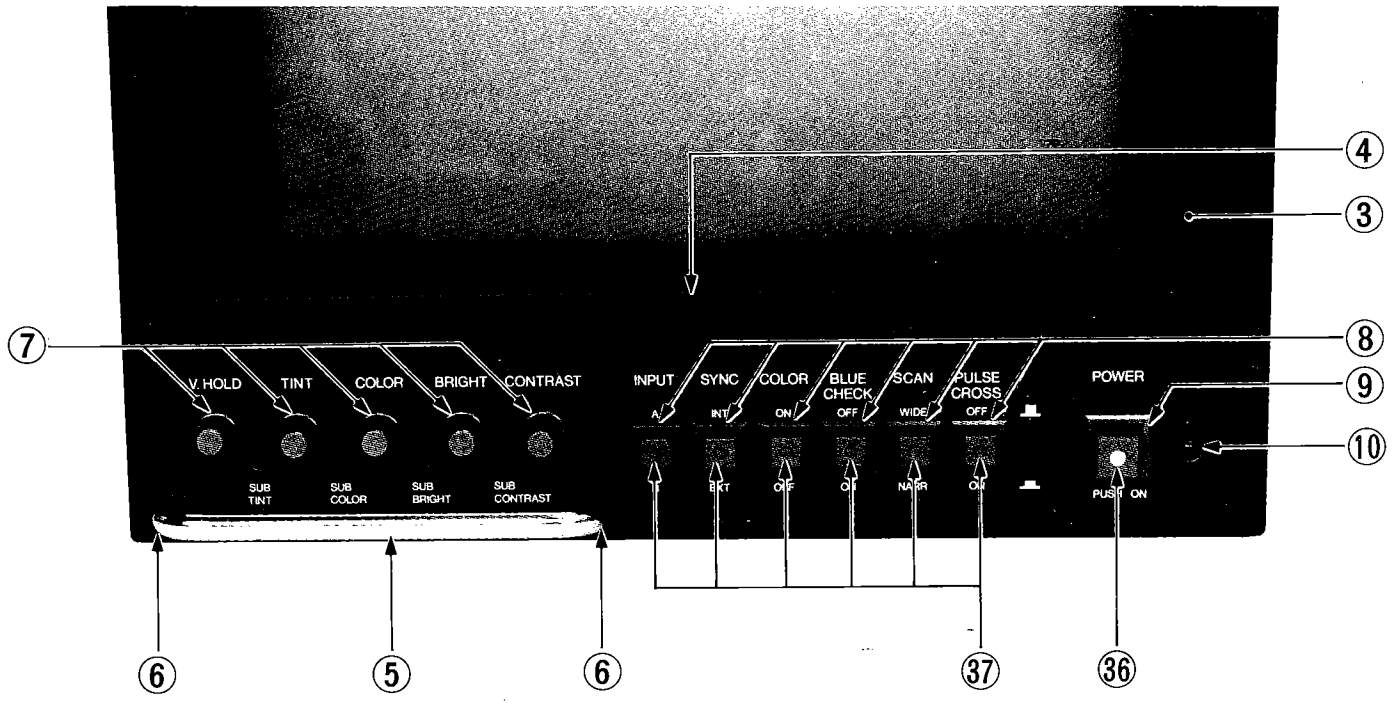
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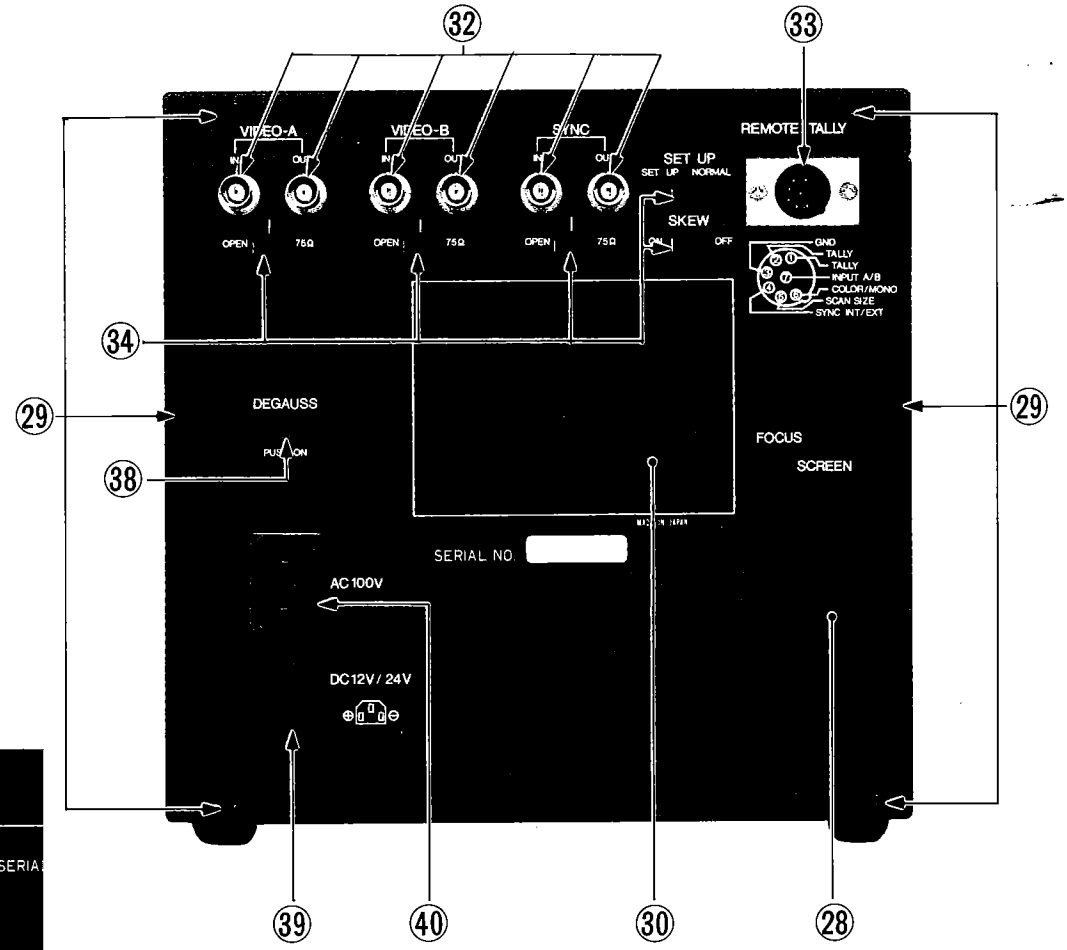
VIDEO-A
VIDEO-B
SYNC
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GND
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TALLY
INPUT A/B
COLOR/MONO
SCAN SIZE
SYNC INT/EXT
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33
34
29
29
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SCREEN
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DC12V/24V
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40
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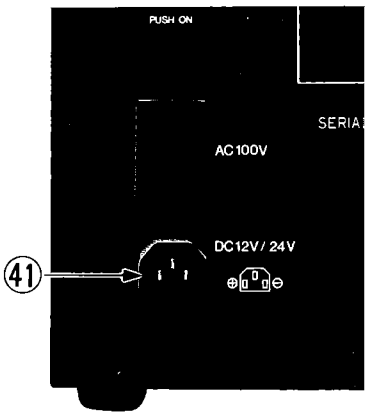
28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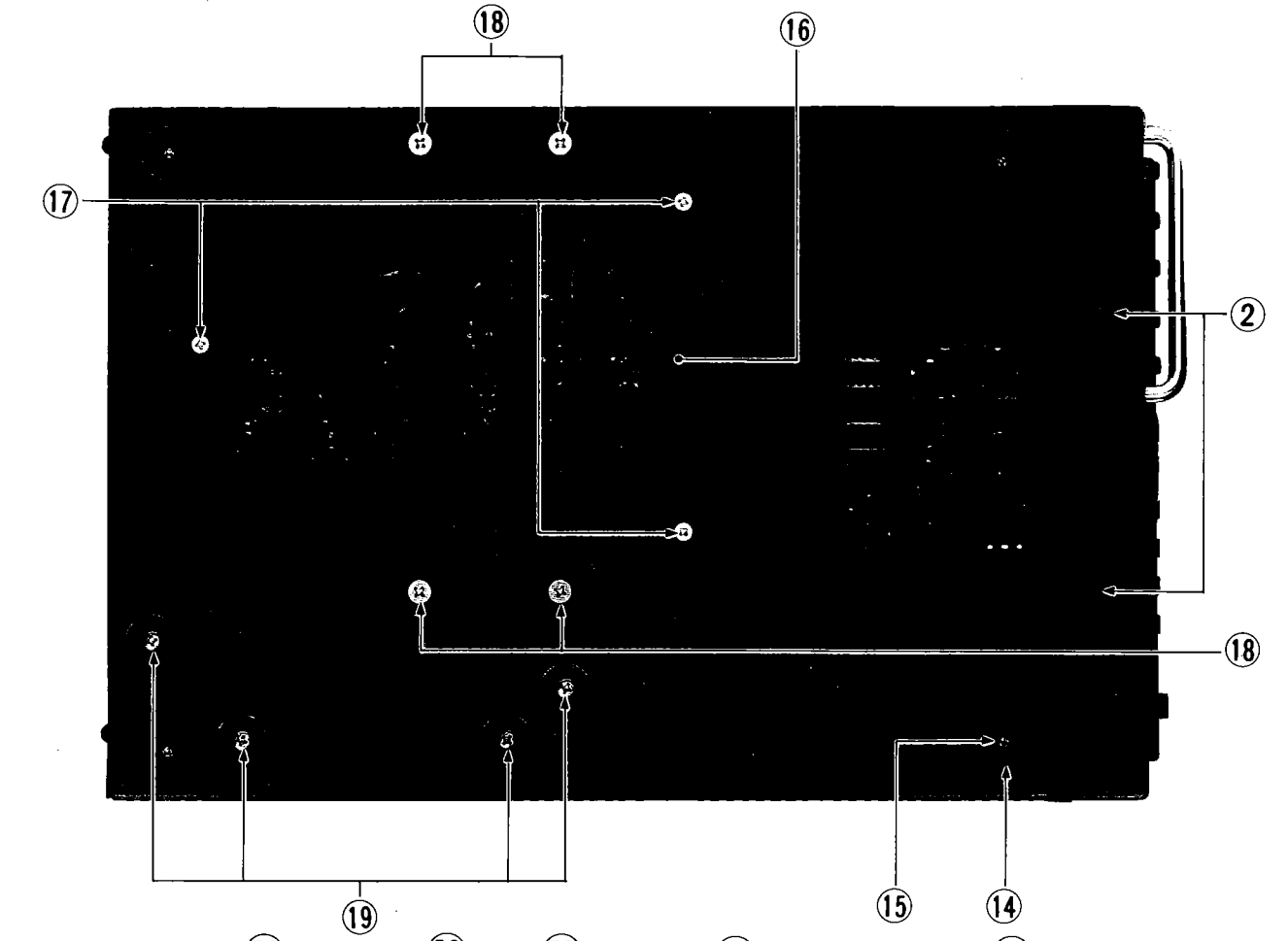
AC100V
DC12V/24V
41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17
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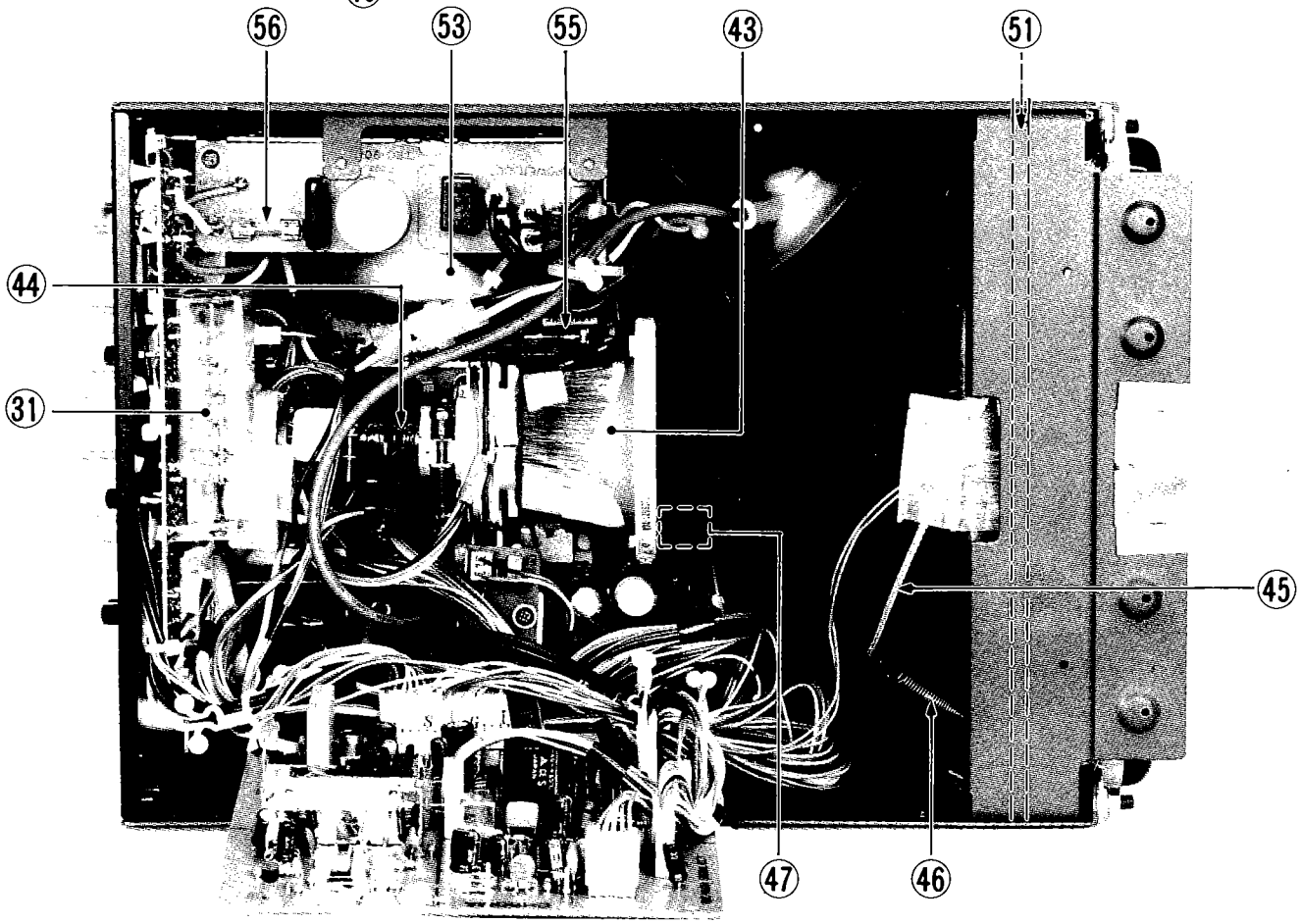
14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TM-R9U SCHEMATIC DIAGRAM

■ NOTICE

○ The voltage reading and waveform ware measured at each point with a multi-meter and an oscilloscope while receiving a video signal (color bar) through the video input terminal (A) on the monitor.
The measurements were made with each VR under the condition just after the shipment. The figures of the signal circuits may be more or less different after adjustments, so use the figures simply for reference.
Multimeter used
DC 20kΩ/V
Given figures are all DC voltages.
Sweep speed of oscilloscope
H → 20 μS/div.
V → 5 mS/div.
Others → sweep speed specified

○ Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

■ SAFETY

○ FR (▭) denotes a fusible resistor which operates as a fuse. When replacing fusible resistors parts indicated with black shading (▩) in the circuit diagrams, be sure to ensure safety by using designated parts.

○ As to other parts too, use designated parts to maintain safety and performance.

■ INDICATING METHOD OF PARTS SYMBOL NUMBERS

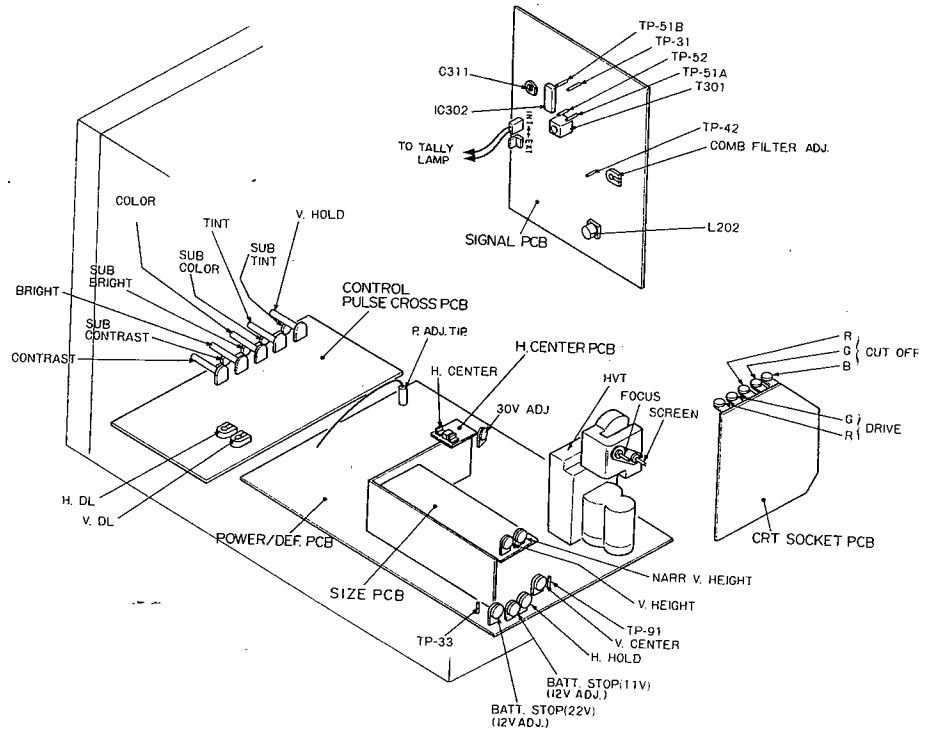
○ Inside board (Example) TRC-1042A: R1209 → R209

○ Outside board (Example) R0001 → R01

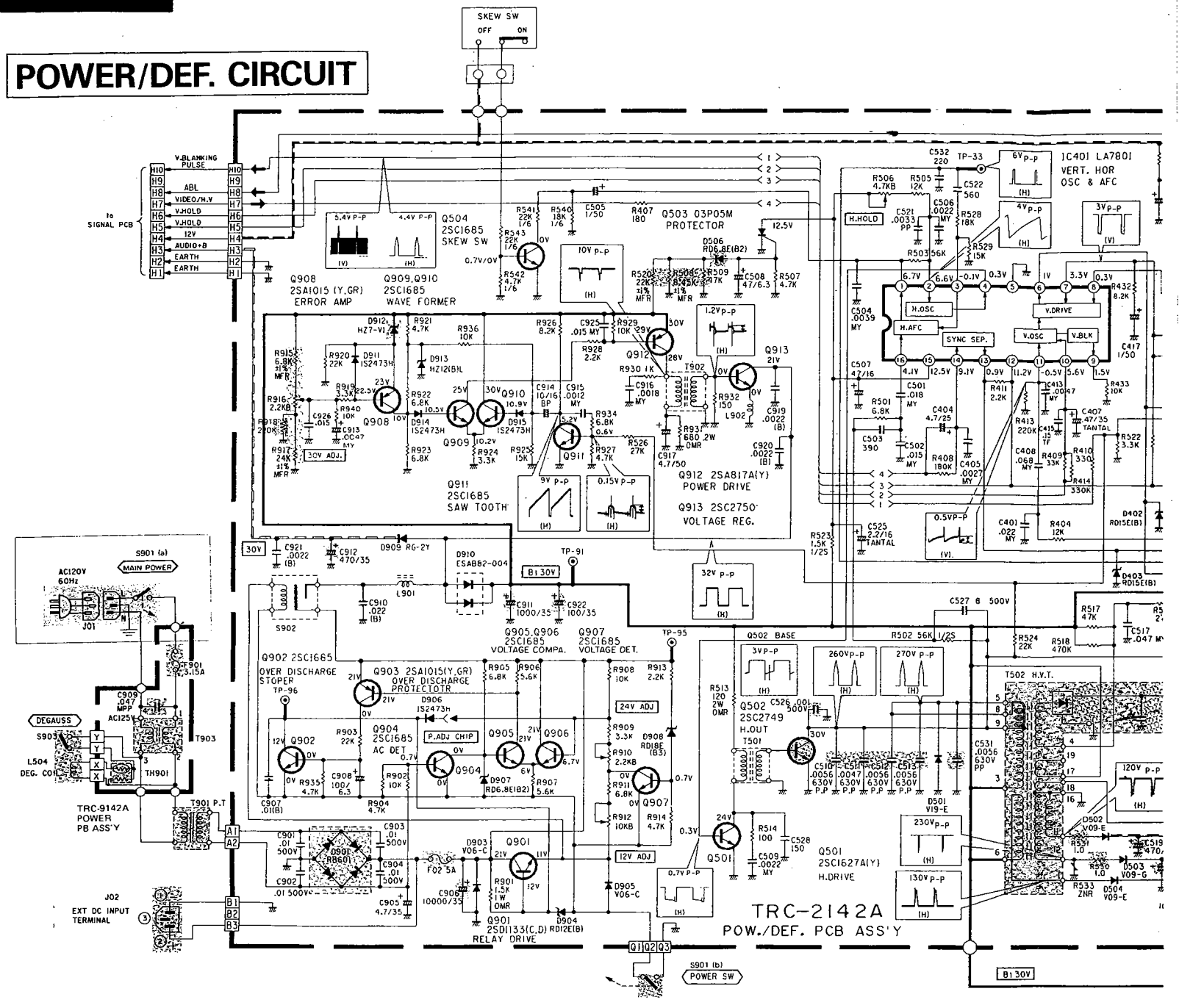
■ CIRCUIT DIAGRAM INDICATING METHOD

1. Resistor
   ○ Resistance value
   Without unit : [Ω] K : [kΩ] M : [MΩ]
   ○ Rated allowable power
   Without indication : ⅛[W] Others : Indicated
   ○ Type
   Without indication : Carbon resistor
   OMR : Oxide metal film resistor
   UNF : Inflammable resistor
   CMF, MFR : Coating metal film resistor
   FR : Fusible resistor
   * Composition resistor 1/2 [W] is indicated as 1/2S or Comp.
2. Capacitor
   ○ Capacitance
   Above 1 [pF] : Below 1 [μF]
   ○ Pressure tightness
   Without indication : DC 50 [V]
   Others : DC pressure-tight [V]
   AC indicated : AC pressure-tight [V]
   ○ Indications for electrolitic capacitors are as follows.
   (example) 47/50 → capacitance [μF] / pressure-tightness [V]
   ○ Type
   Without indication : Ceramic capacitor
   MY : Mylar capacitor
   MM : Metalized mylar capacitor
   PP : Polypropylene capacitor
   MPP : Metalized polypropylene capacitor
   NP : Nonpolar electrolytic capacitor
   BP : Bipolar electrolytic capacitor
   TANTAL : Tantal
3. Coil
   Without unit : [μH]
4. Test point
   ⊙ : Test point by miniature GT pin
   ○ : Only test point is indicated
5. Connection method
   ▭ : Connector , ⟶ : Receptacle
   ○ ◯ : Wrapping or soldering
6. Power
   ——— : B1 Voltage(30V), - - - : B2 Voltage(13V)
   ▭▭▭ : 30V, ▬ ▬ ▬ : 12V
   * Each voltage reading specified.

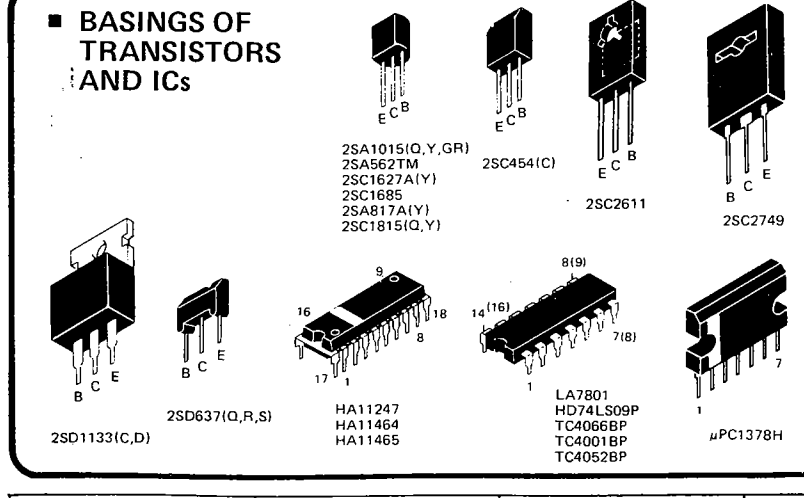
ALIGNMENTS LOCATION



POWER/DEF. CIRCUIT



■ BASINGS OF TRANSISTORS AND ICs

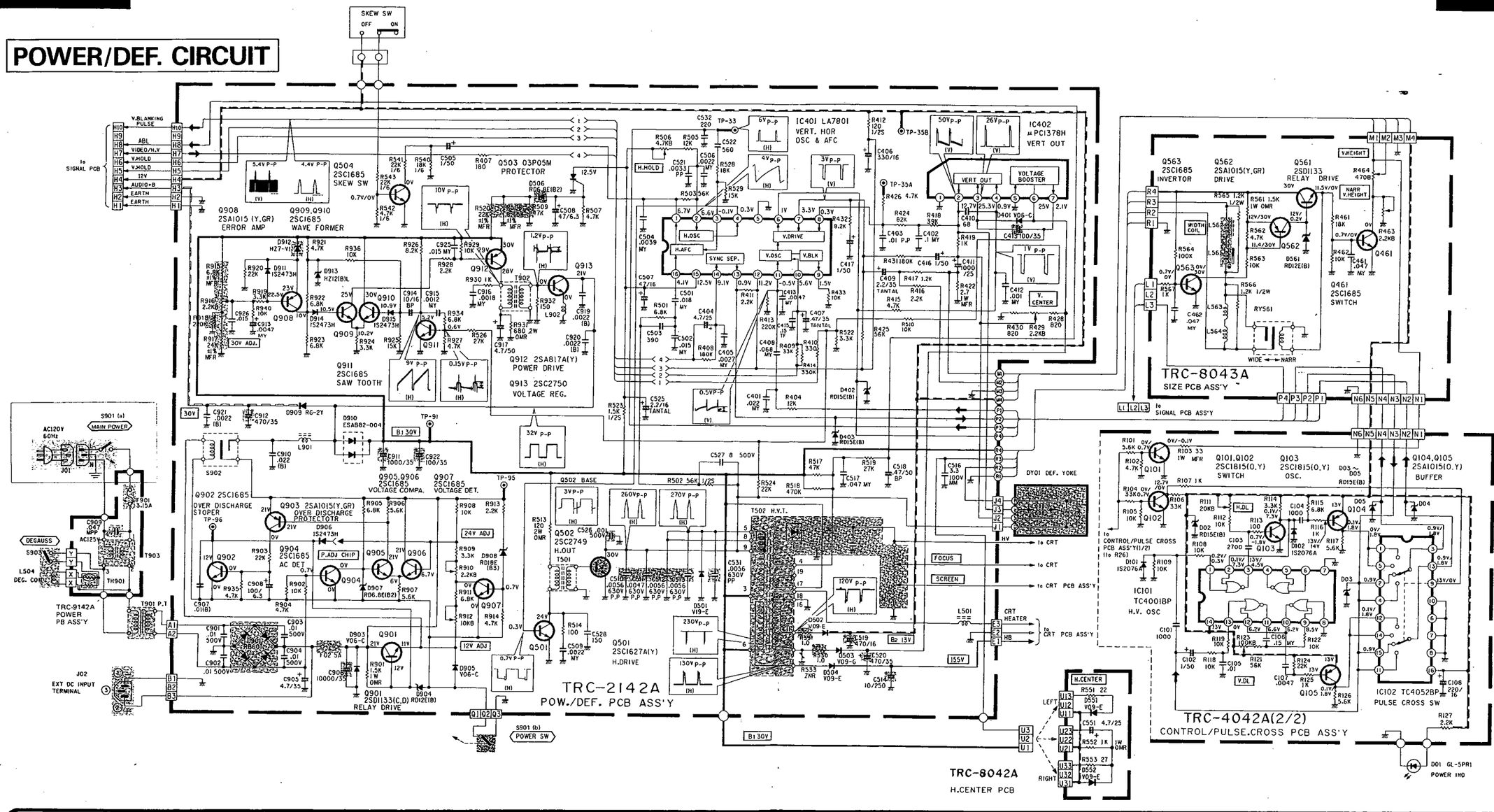


■ PARTS LIST (SHADED PARTS IN THE SCHEMATIC DIAGRAM)

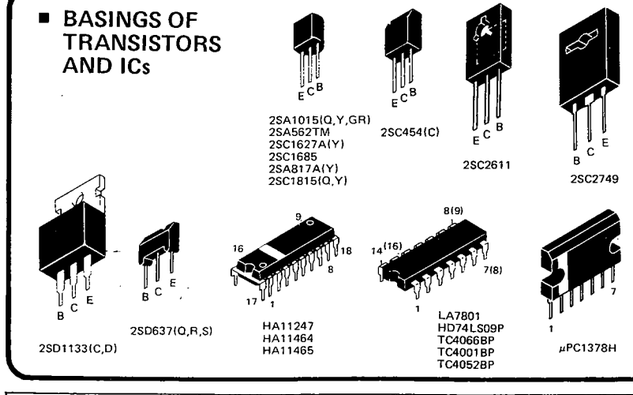
Symbol No.	Part No.	
TRC-1042A (SIGNAL PCB ASS'Y)		
FR1201	QRZ0054-3R9M	F
TRC-2142A (DEF/POW PCB ASS'Y)		
R2508	QRV141F-8451Y	M
2509	QRD141J-473SY	C
2520	QRV141F-2202Y	M
2530,31	QRD149J-1R0S	C
2915	QRV141F-6801Y	M
2916	A75557-222	V
2917	QRV141F-2402Y	M
C2413	QET51VR-107	E
2510	QFP42JJ-562M	P
2511	" -472M	
2512,13	" -562M	
2514	QEZ0077-106M	E
2519	QET51CR-477	
2520	QET51VR-477	
2526	QCY32HK-681M	C

TM-R9U
TM-R9U

POWER/DEF. CIRCUIT



■ BASINGS OF TRANSISTORS AND ICs



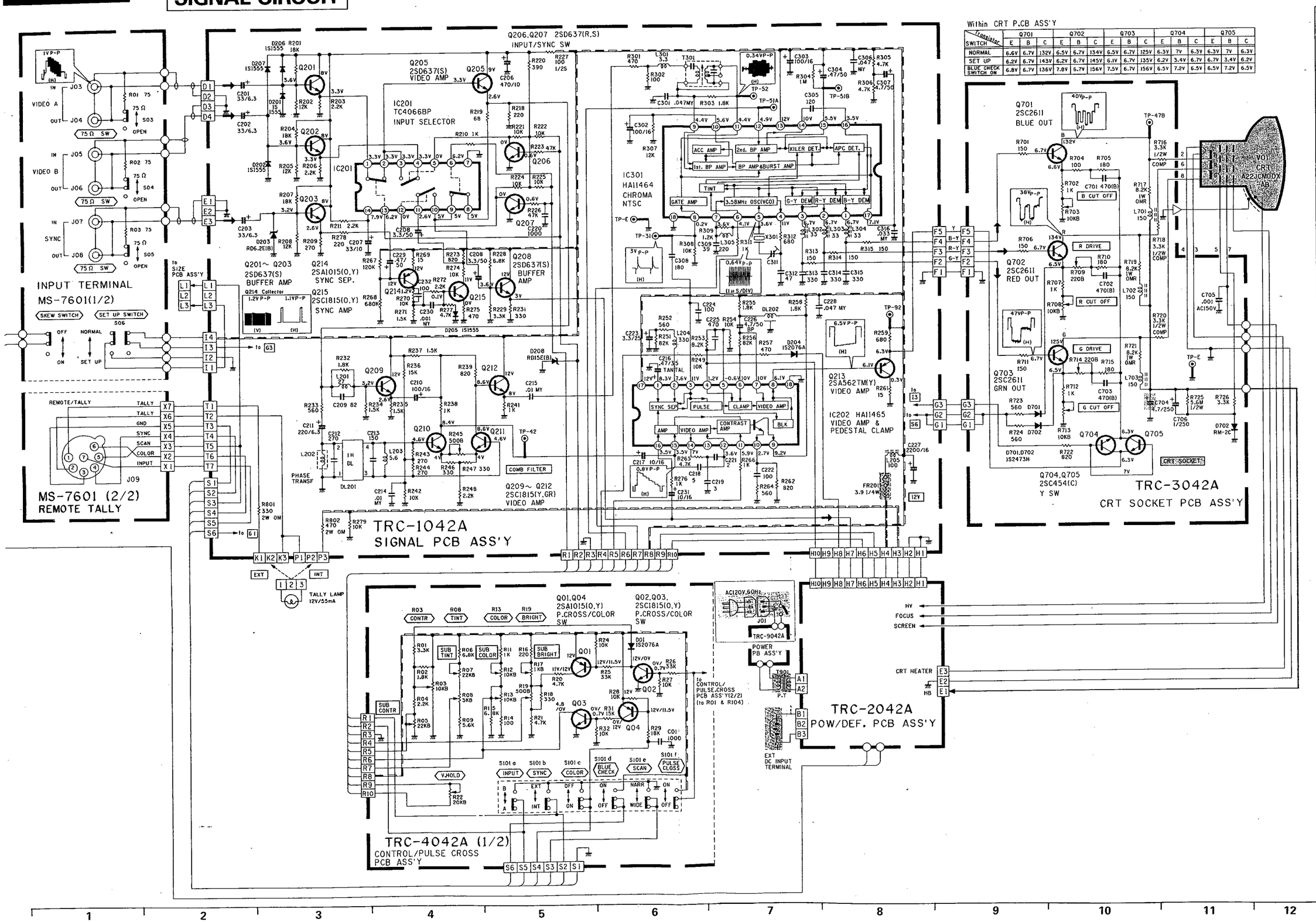
■ PARTS LIST (SHADED PARTS IN THE SCHEMATIC DIAGRAM)

Symbol No.	Part No.	Part Name
TRC-1042A (SIGNAL PCB ASS'Y)		
FR1201	QRZ0054-3R9M	F R
TRC-2142A (DEF/POW PCB ASS'Y)		
R2508	QRV141F-8451Y	MF R
2509	QRD141J-473SY	C R
2520	QRV141F-2202Y	MF R
2530,31	QRD149J-1R0S	C R
2915	QRV141F-6801Y	MF R
2916	A75557-222	V R
2917	QRV141F-2402Y	MF R
C2413	QET51VR-107	E Cap.
2510	QFP42JJ-562M	PP Cap.
2511	" -472M	"
2512,13	" -562M	"
2514	QEZ0077-106M	E Cap.
2519	QET51CR-477	"
2520	QET51VR-477	"
2526	QCY32HK-681M	C Cap.

Symbol No.	Part No.	Part Name
C2531	QFP42JJ-562M	PP Cap.
2906	QEV71VR-109M	E Cap.
2911	QET51VR-108	"
2912	" -477	"
2922	QEM41VM-107M	"
D2506	RD6.8E(B2)	Zener Diode
2901	RB601	Si. Diode
2912	HZ7-V1	Zener Diode
Q2502	2SC2749	Si. Transistor
F02	QMF51U1-5R0S	Fuse
R2918	QRD141J-224SY	C R
TRC-3042A (CRT SOCKET PCB ASS'Y)		
C3704	QET52ER-475	E Cap.
	CE40228-00A	CRT Socket
(SIZE PCB ASS'Y)		
L8561	CE40222-001	Lin. Coil
8562	CE30001-420	Heater Choke

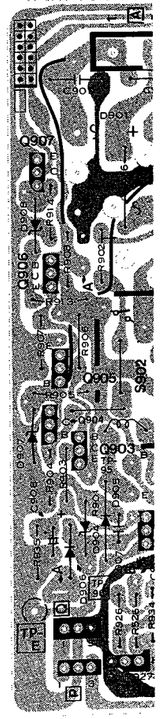
Symbol No.	Part No.	Part Name
TRC-9142A (POWER PCB ASS'Y)		
C909	QFZ9020-473M	MF Cap.
T903	CE40180-00A	Line Filter
F901	QMF53U1-3R15S	Fuse
TH901	A75511	Posistor
OUTSIDE OF THE PCB ASS'Ys		
J01	QMC0335-003R	AC Socket
J02	CEX40121-001	DC Socket
V01	A22JCM00X-AB	Picture Tube
DY01	CJ-26001-00A	Def. Yoke
T502	CJ26055-00A	HV Transf.
L504	CJ39562-00A	Degaussing Coil
T901	CE30058-B0A	Power Transf.
	CE40199-001	Push Switch
	QMP1110-244K	Power Cord
S901	CEX40204-00B	Power Switch

SIGNAL CIRCUIT



Within CRT P.CB ASS'Y

Transistor / SWITCH	Q701 E	Q701 B	Q701 C	Q702 E	Q702 B	Q702 C	Q703 E	Q703 B	Q703 C	Q704 E	Q704 B	Q704 C	Q705 E	Q705 B	Q705 C
NORMAL	6.6V	6.7V	132V	6.5V	6.7V	134V	6.5V	6.7V	125V	6.3V	7V	6.3V	6.3V	7V	6.3V
SET UP	6.2V	6.7V	143V	6.2V	6.7V	145V	6.1V	6.7V	135V	6.2V	3.4V	6.7V	6.7V	3.4V	6.2V
BLUE CHECK SWITCH ON	6.8V	6.7V	136V	7.8V	6.7V	156V	7.5V	6.7V	156V	6.5V	7.2V	6.5V	6.5V	7.2V	6.5V



Within CRT P.CB ASS'Y

Transistor / SWITCH	Q701 E	Q701 B	Q701 C	Q702 E	Q702 B	Q702 C	Q703 E	Q703 B	Q703 C	Q704 E	Q704 B	Q704 C	Q705 E	Q705 B	Q705 C
NORMAL	6.6V	6.7V	132V	6.5V	6.7V	134V	6.5V	6.7V	125V	6.3V	7V	6.3V	6.3V	7V	6.3V
SET UP	6.2V	6.7V	143V	6.2V	6.7V	145V	6.1V	6.7V	135V	6.2V	3.4V	6.7V	6.7V	3.4V	6.2V
BLUE CHECK SWITCH ON	6.8V	6.7V	136V	7.8V	6.7V	156V	7.5V	6.7V	156V	6.5V	7.2V	6.5V	6.5V	7.2V	6.5V

IC301 HA11464 CHROMA NTSC

ACC AMP · 2nd. BP AMP · KILER DET. · APC DET. · 1st. BP AMP · BP AMP&BURST AMP · TINT · GATE AMP · 3.58MHz OSC(VCO) · G-Y DEM · R-Y DEM · B-Y DEM

IC202 HA11465 VIDEO AMP & PEDESTAL CLAMP

SYNC SEP · PULSE · CLAMP · VIDEO AMP · CONTRAST AMP · BLK · AMP · VIDEO AMP

Q213 2SA562TM(Y) VIDEO AMP

Q701 2SC2611 BLUE OUT · Q702 2SC2611 RED OUT · Q703 2SC2611 GRN OUT

B CUT OFF · R DRIVE · R CUT OFF · G DRIVE · G CUT OFF

Q704,Q705 2SC454(C) Y SW

D701,D702 1S2473H

CRT SOCKET

TRC-3042A CRT SOCKET PCB ASS'Y

Q02,Q03, 2SC1815(O,Y) P.CROSS/COLOR SW

AC120V,60Hz · J01 · TRC-9042A · POWER PB ASS'Y · T901 · P.T

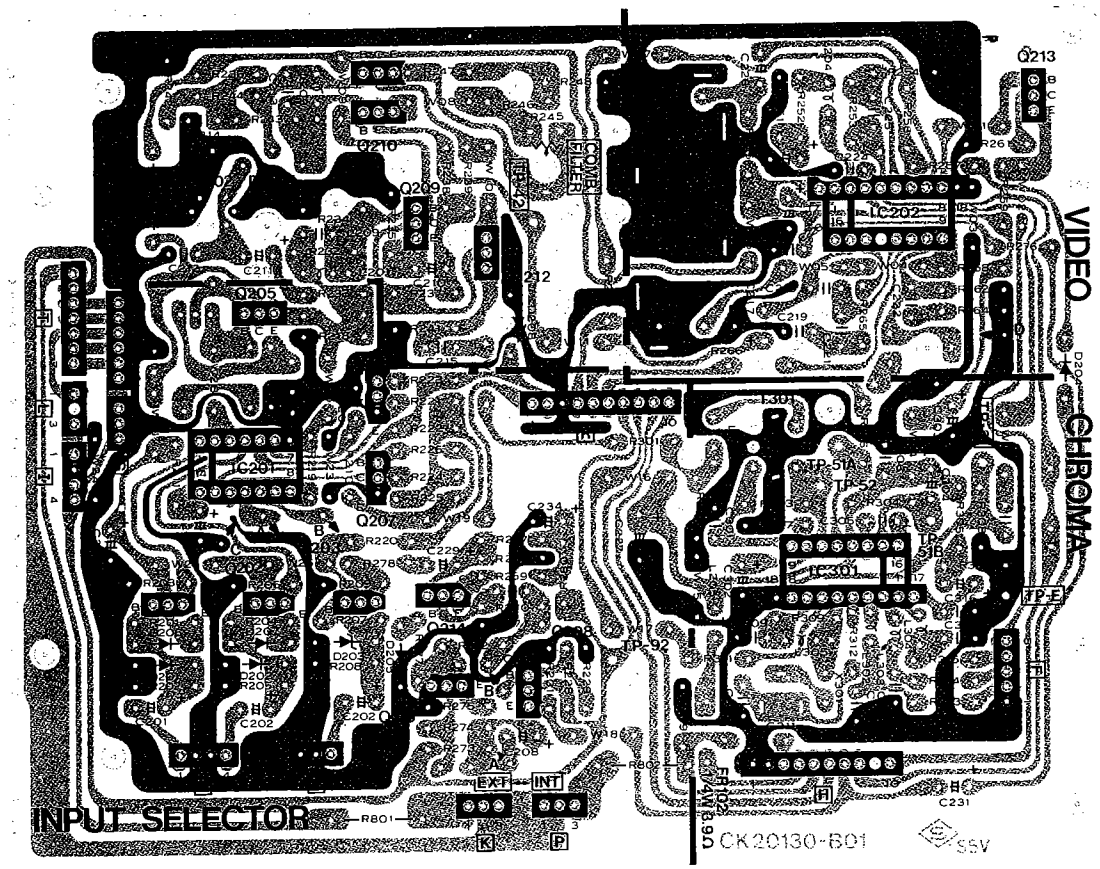
HV · FOCUS · SCREEN · CRT HEATER · HB

EXT DC INPUT TERMINAL

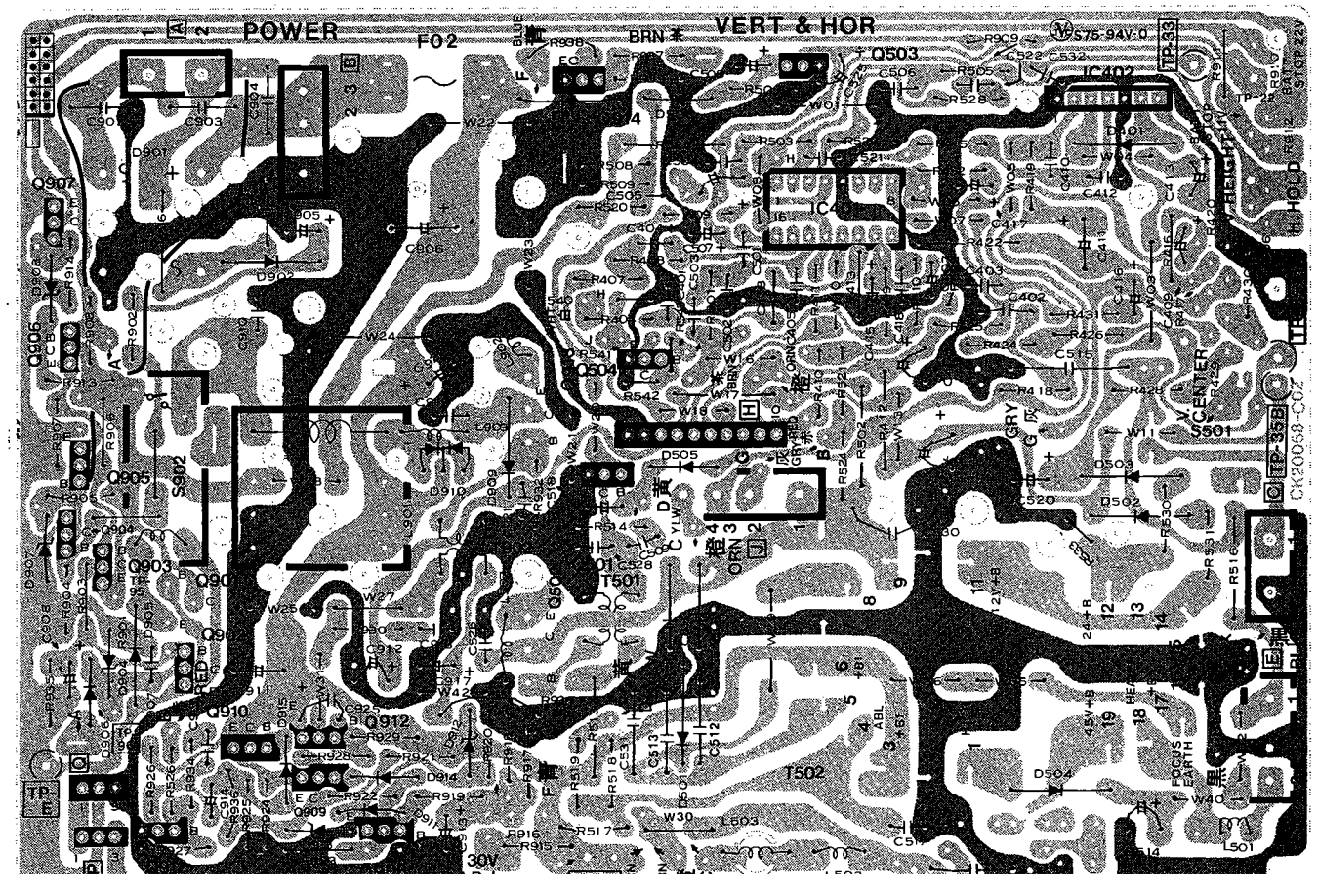
to CONTROL/ PULSE,CROSS PCB ASS'Y(2/2) (to R01 & R104)

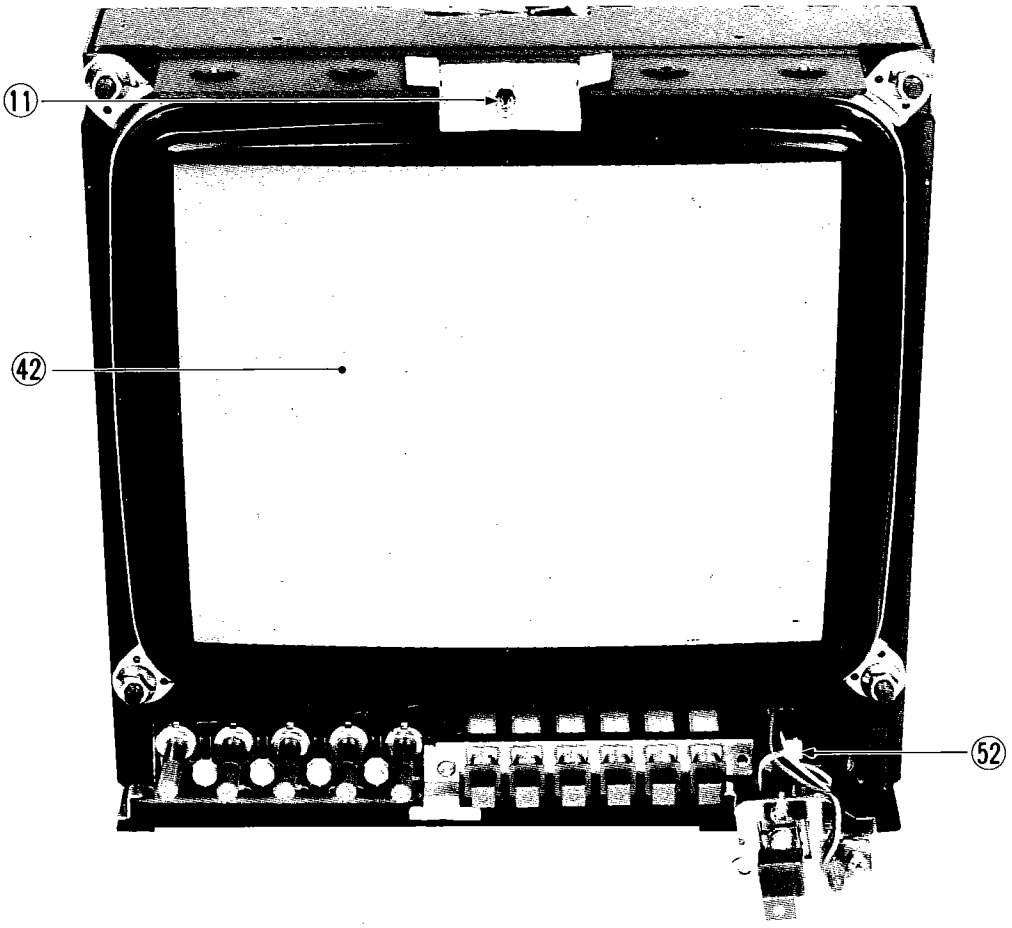
TRC-2042A POW/DEF. PCB ASS'Y

SIGNAL P B



POWER/DEF. P B

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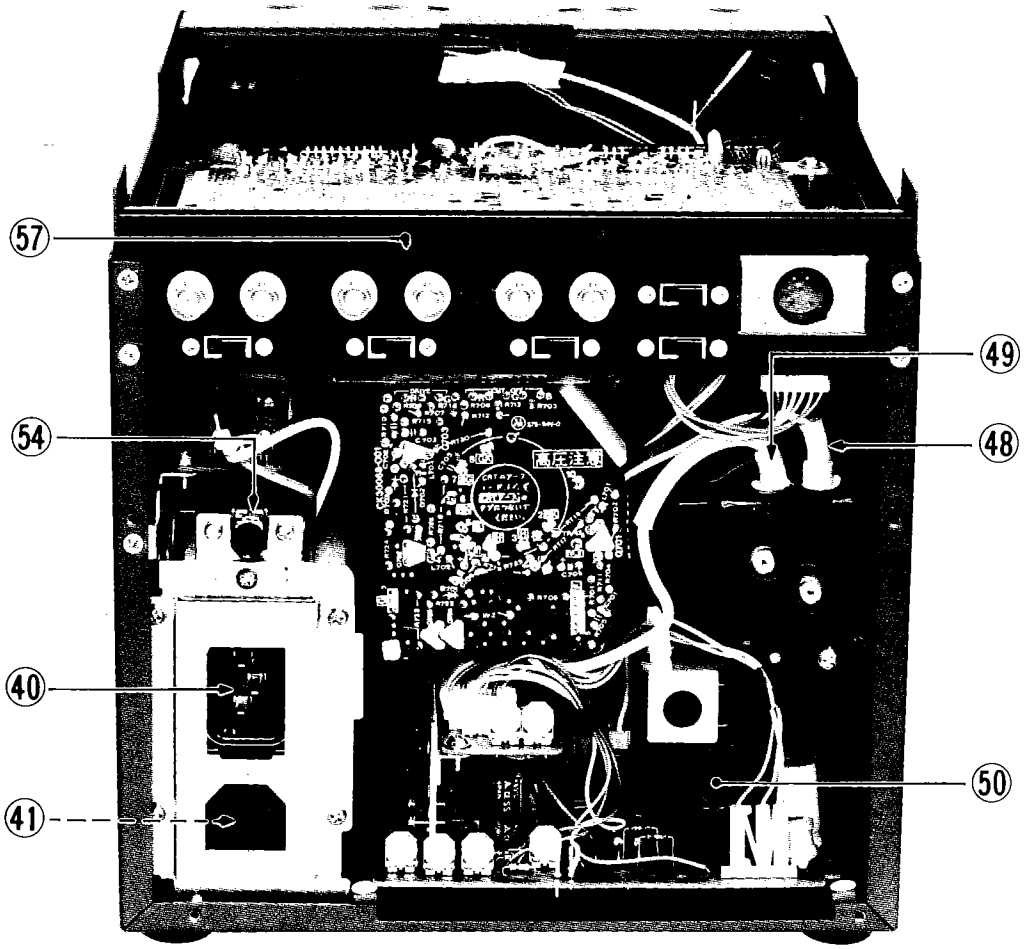
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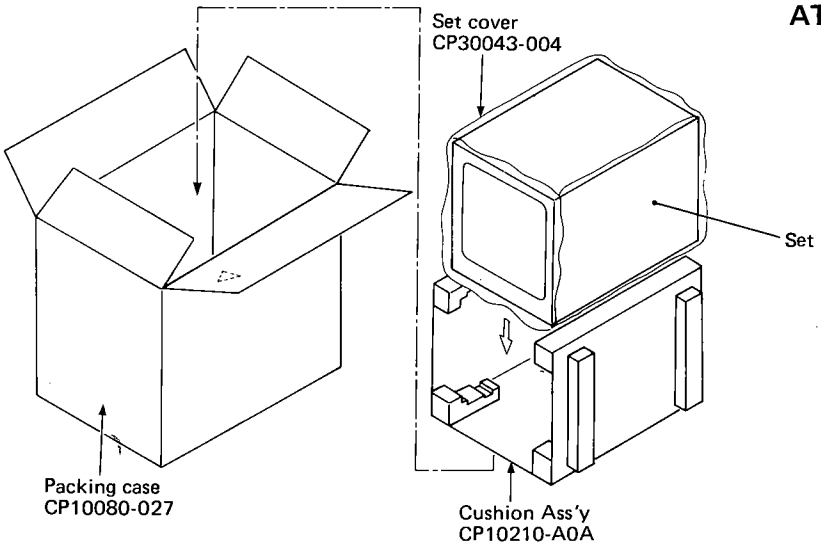
PACKING DIAGRAM



ATTACHED MATTERS

Instruction book	: TM-R9U-IB-A
Power cord	⚠ : QMP1110-244K
Warranty card	: BT-20061

JVC®

JVC COMPANY OF AMERICA
Service & Engineering Division
41 Slater Drive, Elmwood Park, N.J. 07407

OFFICE LOCATIONS

National Headquarters

(East Coast) :	41 Slater Drive, Elmwood Park, New Jersey 07407	(201) 794-3900
Midwest :	2250 Lively Boulevard, Elk Grove, Illinois 60007	(312) 364-0880
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TM-R9U SCHEMATIC DIAGRAM

■ NOTICE

○ The voltage reading and waveform ware measured at each point with a multi-meter and an oscilloscope while receiving a video signal (color bar) through the video input terminal (A) on the monitor.
The measurements were made with each VR under the condition just after the shipment. The figures of the signal circuits may be more or less different after adjustments, so use the figures simply for reference.
Multimeter used
DC 20kΩ/V
Given figures are all DC voltages.
Sweep speed of oscilloscope
H → 20 μS/div.
V → 5 mS/div.
Others → sweep speed specified

○ Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

■ SAFETY

○ FR ( ) denotes a fusible resistor which operates as a fuse. When replacing fusible resistors parts indicated with black shading ( ) in the circuit diagrams, be sure to ensure safety by using designated parts.

○ As to other parts too, use designated parts to maintain safety and performance.

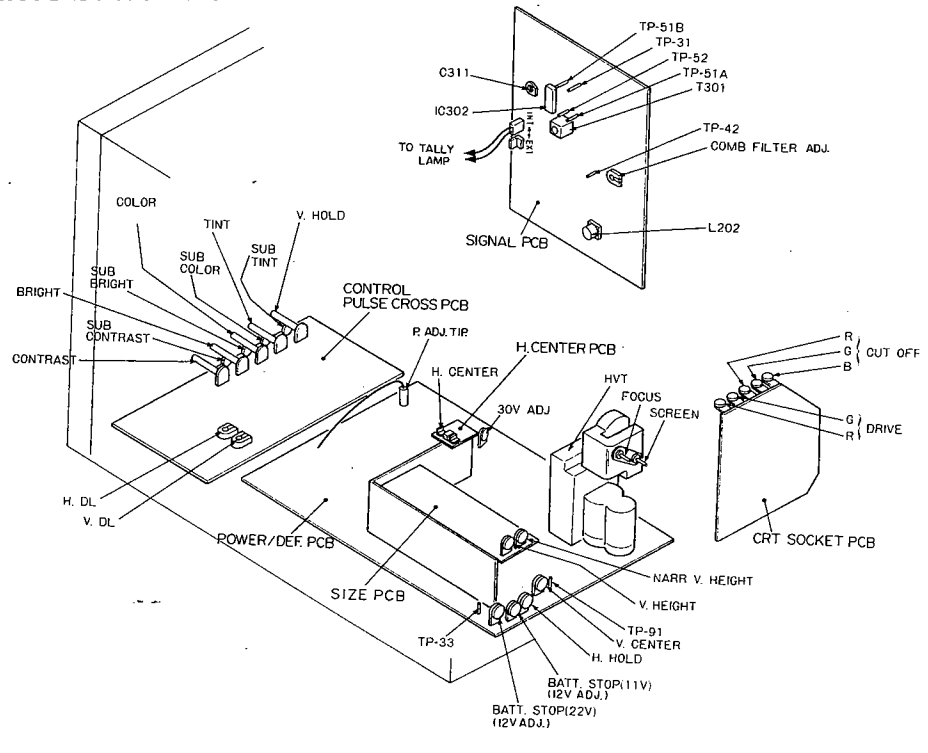
■ INDICATING METHOD OF PARTS SYMBOL NUMBERS

○ Inside board (Example) TRC-1042A: R1209 → R209
○ Outside board (Example) R0001 → R01

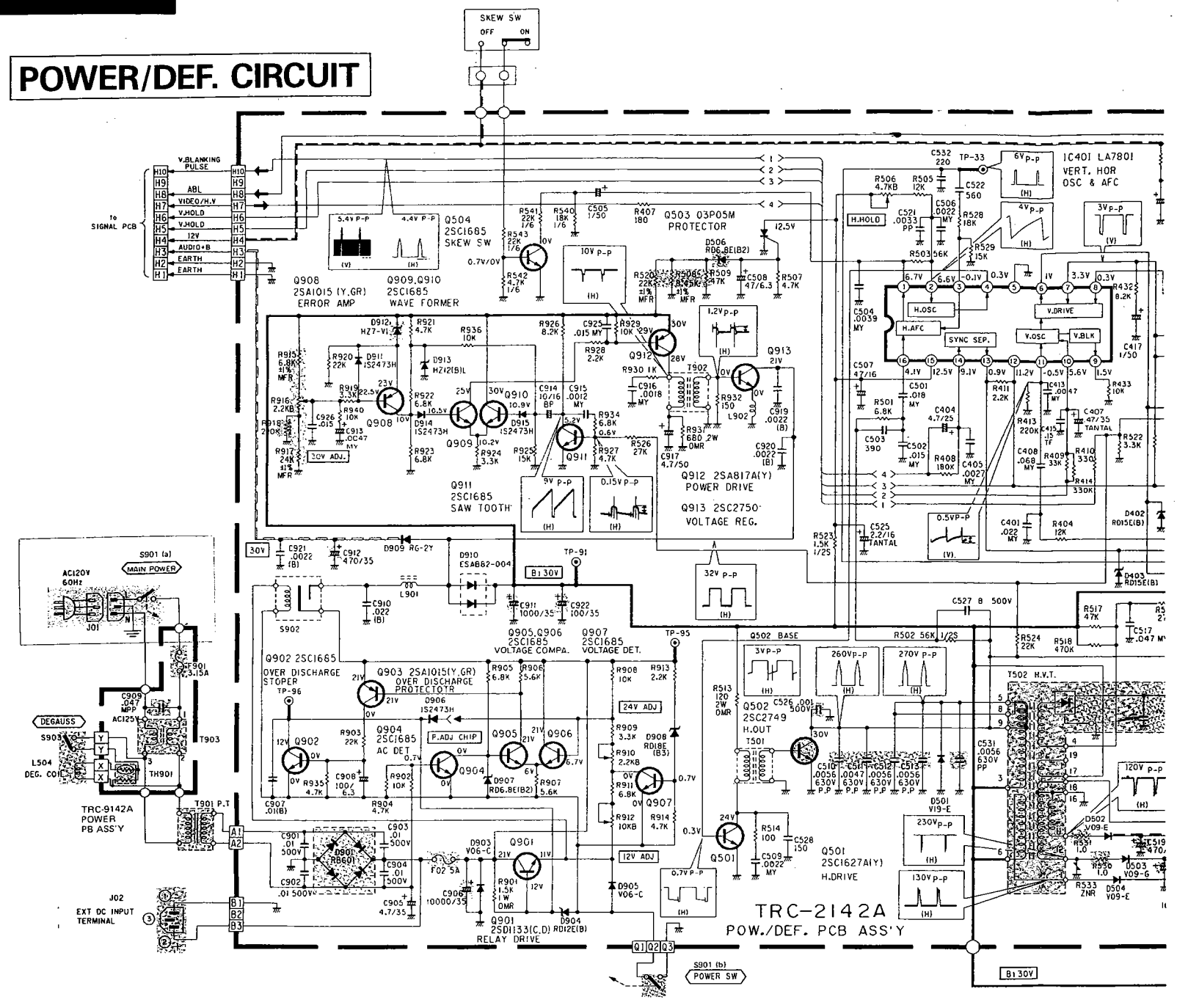
■ CIRCUIT DIAGRAM INDICATING METHOD

1. Resistor
   ○ Resistance value
   Without unit : [Ω] K : [kΩ] M : [MΩ]
   ○ Rated allowable power
   Without indication : ¼[W] Others : Indicated
   ○ Type
   Without indication : Carbon resistor
   OMR : Oxide metal film resistor
   UNF : Inflammable resistor
   CMF, MFR : Coating metal film resistor
   FR : Fusible resistor
   * Composition resistor 1/2 [W] is indicated as 1/2S or Comp.
2. Capacitor
   ○ Capacitance
   Above 1 [pF] : Below 1 [μF]
   ○ Pressure tightness
   Without indication : DC 50 [V]
   Others : DC pressure-tight [V]
   AC indicated : AC pressure-tight [V]
   ○ Indications for electrolitic capacitors are as follows.
   (example) 47/50 → capacitance [μF] / pressure-tightness [V]
   ○ Type
   Without indication : Ceramic capacitor
   MY : Mylar capacitor
   MM : Metalized mylar capacitor
   PP : Polypropylene capacitor
   MPP : Metalized polypropylene capacitor
   NP : Nonpolar electrolytic capacitor
   BP : Bipolar electrolytic capacitor
   TANTAL : Tantal
3. Coil
   Without unit : [μH]
4. Test point
   ⊙ : Test point by miniature GT pin
   ○ : Only test point is indicated
5. Connection method
   □ : Connector , → : Receptacle
   ○ ◯ : Wrapping or soldering
6. Power
   ——— : B1 Voltage(30V), ▬▬ : B2 Voltage(13V)
   □□□□ : 30V, ▬▬ : 12V
   * Each voltage reading specified.

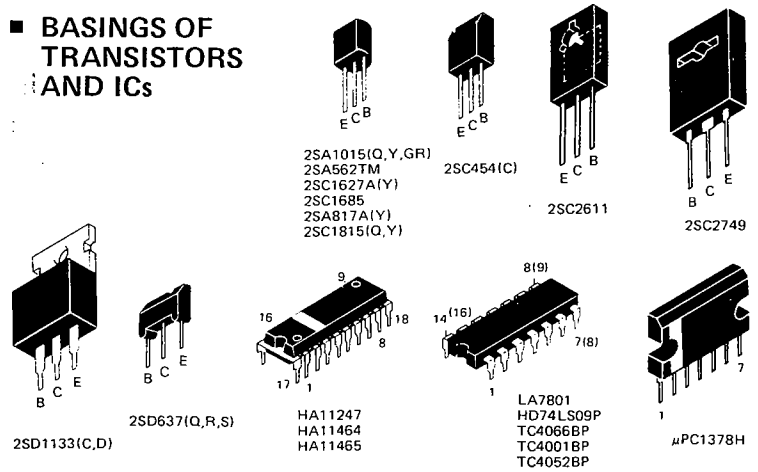
ALIGNMENTS LOCATION



POWER/DEF. CIRCUIT



■ BASINGS OF TRANSISTORS AND ICs



■ PARTS LIST (SHADED PARTS IN THE SCHEMATIC DIAGRAM)

Symbol No.	Part No.	
TRC-1042A (SIGNAL PCB ASS'Y)		
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TRC-2142A (DEF/POW PCB ASS'Y)		
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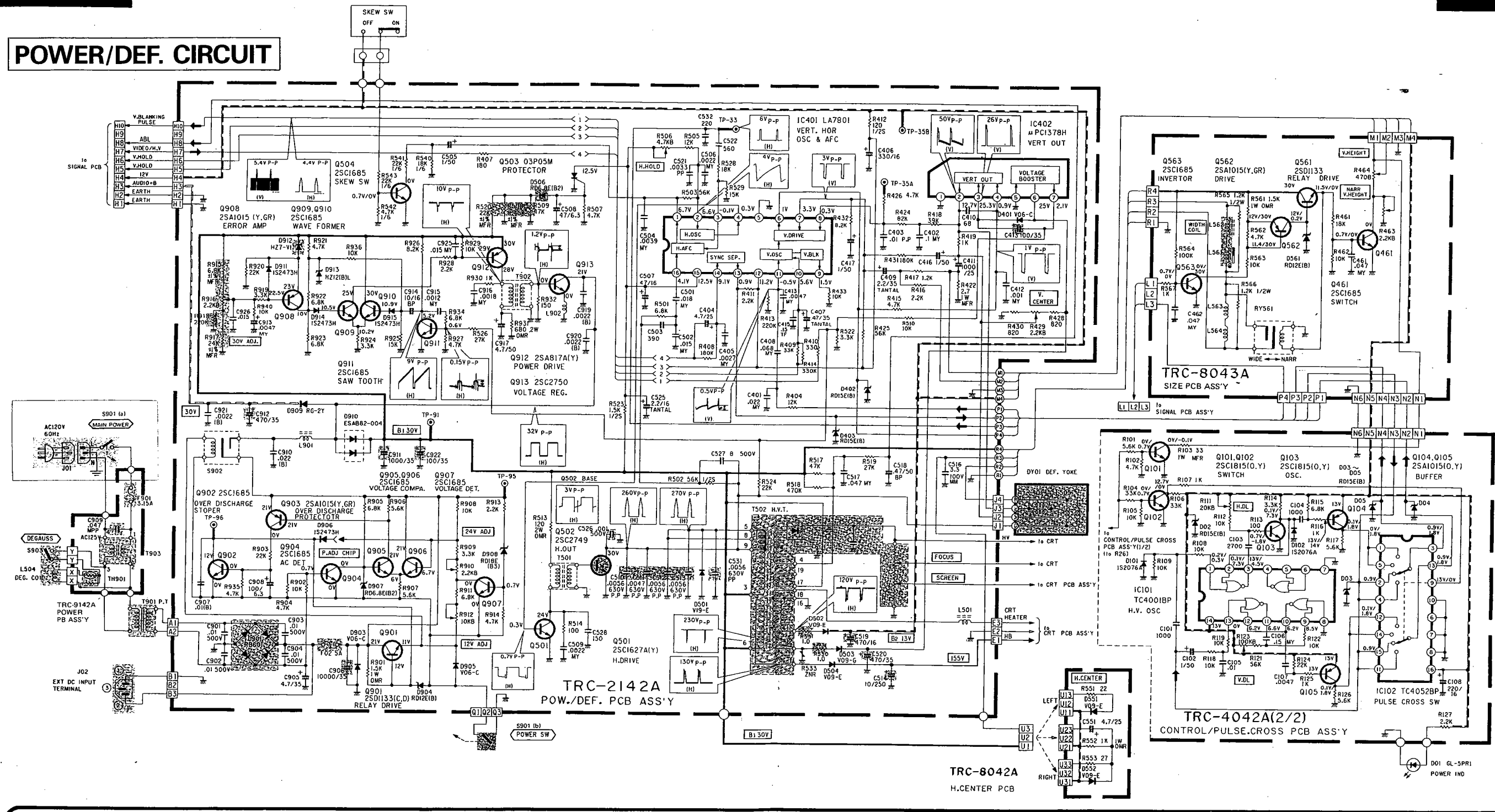
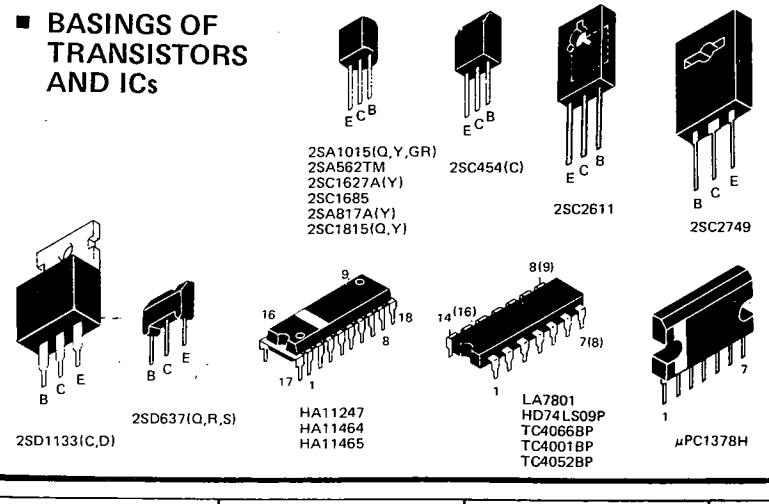
2520	QRV141F-2202Y	M
2530,31	QRD149J-1R0S	C
2915	QRV141F-6801Y	M
2916	A75557-222	V
2917	QRV141F-2402Y	M
C2413	QET51VR-107	E
2510	QFP42JJ-562M	P
2511	" -472M	
2512,13	" -562M	
2514	QEZ0077-106M	E
2519	QET51CR-477	
2520	QET51VR-477	
2526	QCY32HK-681M	C

TM-R9U
TM-R9U

POWER/DEF. CIRCUIT



■ BASINGS OF TRANSISTORS AND ICs



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Symbol No.	Part No.	Part Name
TRC-1042A (SIGNAL PCB ASS'Y)		
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2915	QRV141F-6801Y	MF R
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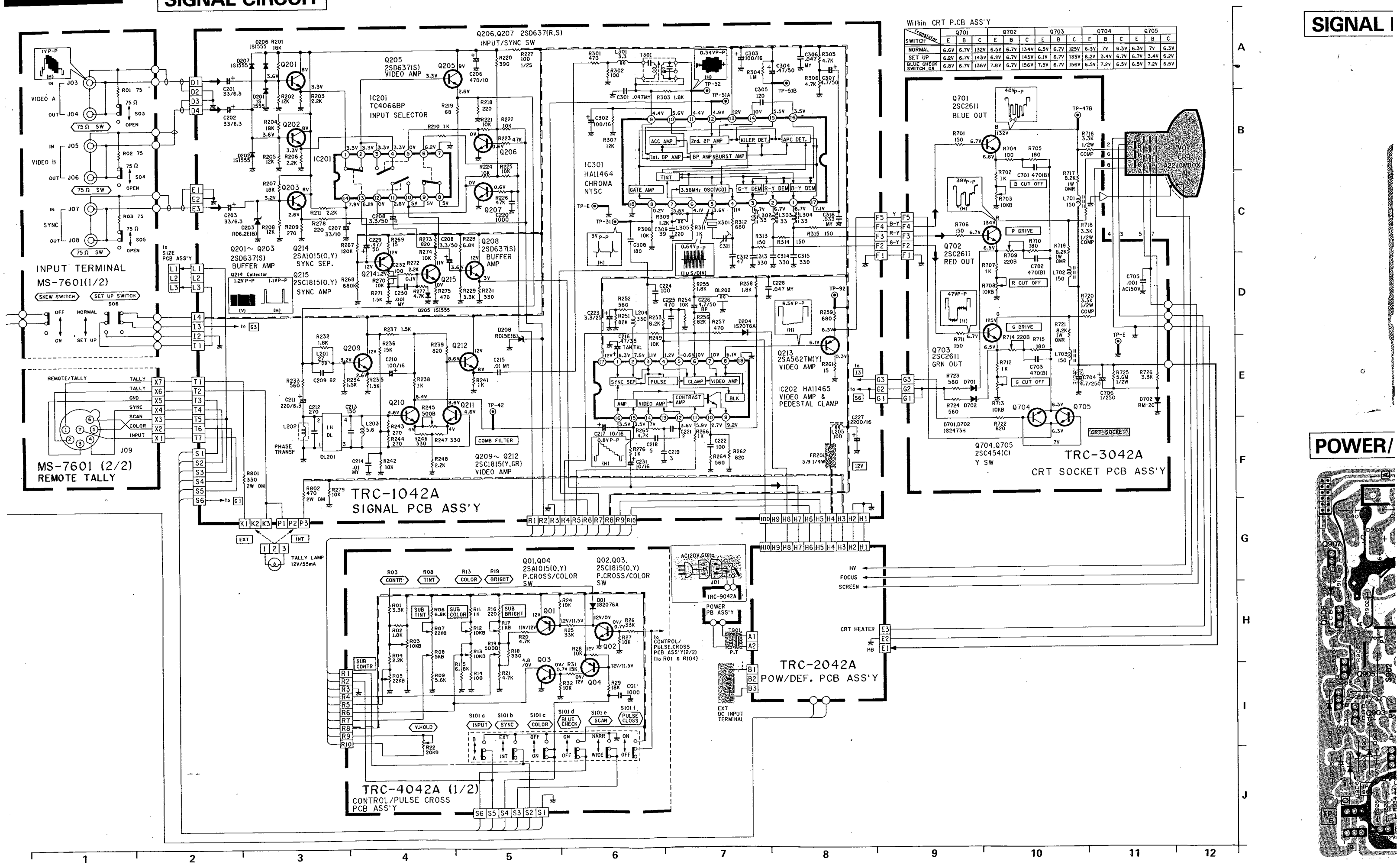
2917	QRV141F-2402Y	MF R
C2413	QET51VR-107	E Cap.
2510	QFP42JJ-562M	PP Cap.
2511	" -472M	"
2512,13	" -562M	"
2514	QEZ0077-106M	E Cap.
2519	QET51CR-477	"
2520	QET51VR-477	"
2526	QCY32HK-681M	C Cap.
C2531	QFP42JJ-562M	PP Cap.
2906	QEV71VR-109M	E Cap.
2911	QET51VR-108	"
2912	" -477	"
2922	QEM41VM-107M	"
D2506	RD6.8E(B2)	Zener Diode
2901	RB601	Si. Diode
2912	HZ7-V1	Zener Diode
Q2502	2SC2749	Si. Transistor
F02	QMF51U1-5R0S	Fuse
R2918	QRD141J-224SY	C R
TRC-3042A (CRT SOCKET PCB ASS'Y)		
C3704	QET52ER-475	E Cap.
	CE40228-00A	CRT Socket
(SIZE PCB ASS'Y)		
L8561	CE40222-001	Lin. Coil
8562	CE30001-420	Heater Choke
TRC-9142A (POWER PCB ASS'Y)		
C909	QFZ9020-473M	MF Cap.
T903	CE40180-00A	Line Filter
F901	QMF53U1-3R15S	Fuse
TH901	A75511	Posistor
OUTSIDE OF THE PCB ASS'Ys		
J01	QMC0335-003R	AC Socket
J02	CEX40121-001	DC Socket
V01	A22JCM00X-AB	Picture Tube
DY01	CJ-26001-00A	Def. Yoke
T502	CJ26055-00A	HV Transf.
L504	CJ39562-00A	Degaussing Coil
T901	CE30058-B0A	Power Transf.
	CE40199-001	Push Switch
	QMP1110-244K	Power Cord
S901	CEX40204-00B	Power Switch

SIGNAL CIRCUIT



SWITCH / Transistor	Q701 E	Q701 B	Q701 C	Q702 E	Q702 B	Q702 C	Q703 E	Q703 B	Q703 C	Q704 E	Q704 B	Q704 C	Q705 E	Q705 B	Q705 C
NORMAL	6.6V	6.7V	132V	6.5V	6.7V	134V	6.5V	6.7V	125V	6.3V	7V	6.3V	6.3V	7V	6.3V
SET UP	6.2V	6.7V	143V	6.2V	6.7V	145V	6.1V	6.7V	135V	6.2V	3.4V	6.7V	6.7V	3.4V	6.2V
BLUE CHECK SWITCH ON	6.8V	6.7V	136V	7.8V	6.7V	156V	7.5V	6.7V	156V	6.5V	7.2V	6.5V	6.5V	7.2V	6.5V

Within CRT P.CB ASS'Y

Terminator / SWITCH	Q701 E	Q701 B	Q701 C	Q702 E	Q702 B	Q702 C	Q703 E	Q703 B	Q703 C	Q704 E	Q704 B	Q704 C	Q705 E	Q705 B	Q705 C
NORMAL	6.6V	6.7V	132V	6.5V	6.7V	134V	6.5V	6.7V	125V	6.3V	7V	6.3V	6.3V	7V	6.3V
SET UP	6.2V	6.7V	143V	6.2V	6.7V	145V	6.1V	6.7V	135V	6.2V	3.4V	6.7V	6.7V	3.4V	6.2V
BLUE CHECK SWITCH ON	6.8V	6.7V	136V	7.8V	6.7V	156V	7.5V	6.7V	156V	6.5V	7.2V	6.5V	6.5V	7.2V	6.5V

IC301 HA11464 CHROMA NTSC

ACC AMP · 2nd. BP AMP · KILER DET. · APC DET. · 1st. BP AMP · BP AMP&BURST AMP · TINT · GATE AMP · 3.58MHz OSC(VCO) · G-Y DEM · R-Y DEM · B-Y DEM

IC202 HA11465 VIDEO AMP & PEDESTAL CLAMP

SYNC SEP · PULSE · CLAMP · VIDEO AMP · AMP · VIDEO AMP · CONTRAST AMP · BLK

Q213 2SA562TM(Y) VIDEO AMP

Q701 2SC2611 BLUE OUT · Q702 2SC2611 RED OUT · Q703 2SC2611 GRN OUT

B CUT OFF · R DRIVE · R CUT OFF · G DRIVE · G CUT OFF

Q704,Q705 2SC454(C) Y SW

Q704 · Q705

CRT SOCKET

TRC-3042A CRT SOCKET PCB ASS'Y

Q02,Q03, 2SC1815(O,Y) P.CROSS/COLOR SW

AC120V,60Hz

TRC-9042A POWER PB ASS'Y

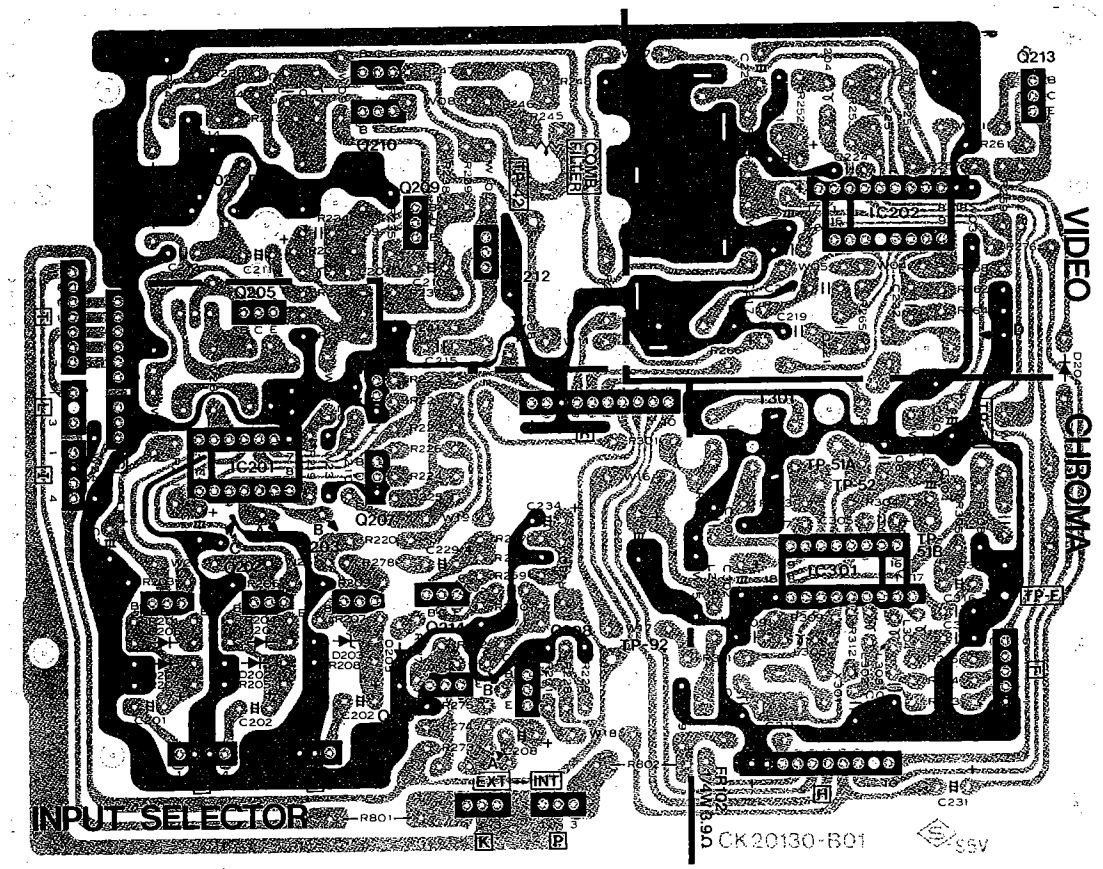
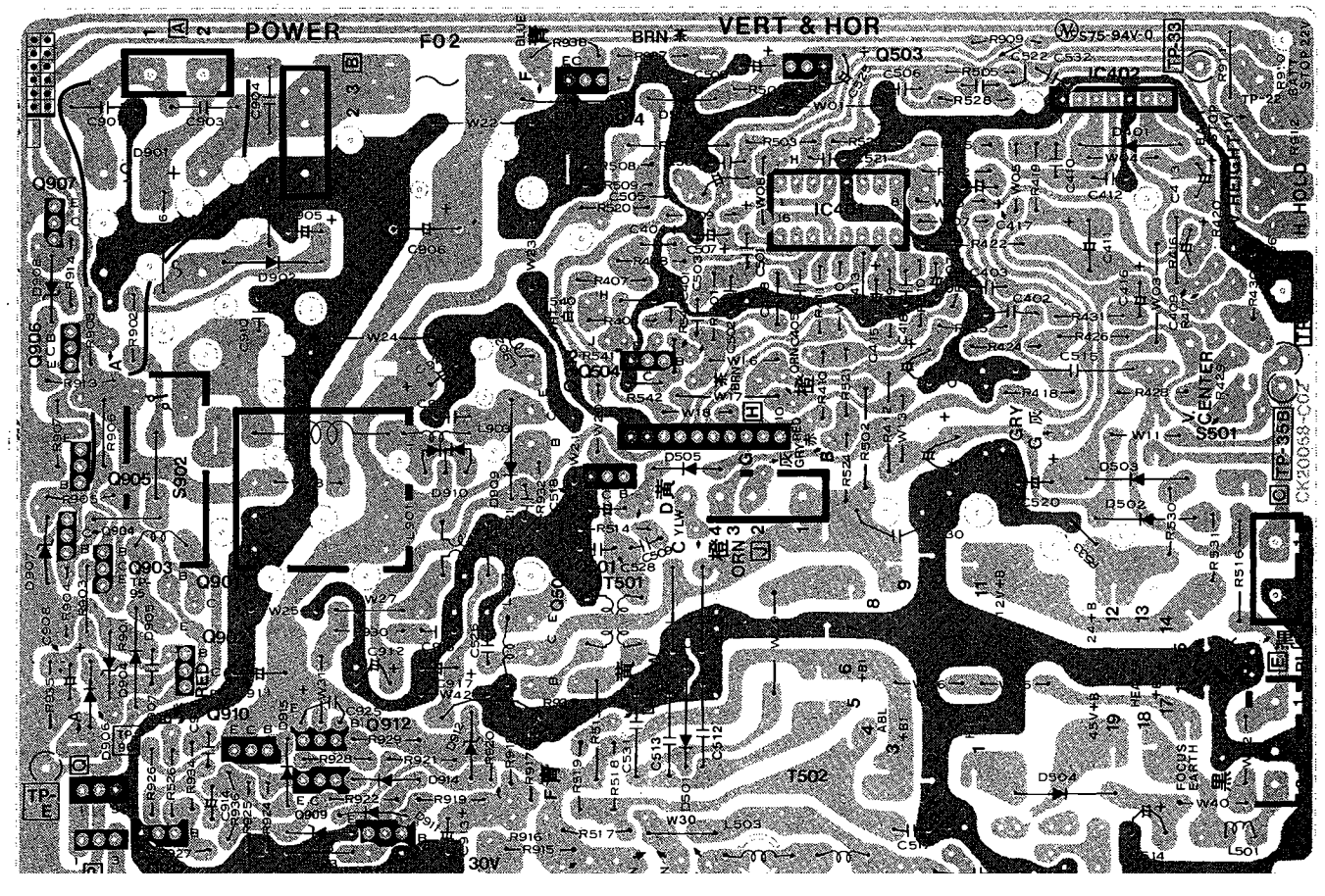
to CONTROL/ PULSE.CROSS PCB ASS'Y(2/2) (to R01 & R104)

HV · FOCUS · SCREEN · CRT HEATER · HB

TRC-2042A POW/DEF. PCB ASS'Y

EXT DC INPUT TERMINAL

SIGNAL P.B



POWER/DEF. P.B